

Sample	Lat	Long	Mine	Source	Description
Atik 1	67.076997	20.966547	Aitik copper mine, Sweden	Boliden Co.	tailings from downstream end of tailings pond, collected close to dam. Collected at spignots where lab duplicate of Atik 1.
Atik 1-Dup	67.076997	20.966547	Aitik copper mine, Sweden	Boliden Co.	copper concentrate before drying
Atik 2	67.076997	20.966547	Aitik copper mine, Sweden	Boliden Co.	Mp 600 waste. Waste from co-flootation from the 600-series.
Atik 3	67.076997	20.966547	Aitik copper mine, Sweden	Boliden Co.	Mp sep. Waste from separation circuit.
Atik 4	67.076997	20.966547	Aitik copper mine, Sweden	Boliden Co.	Stillwater 1
Stillwater 1	45.385728	-109.874981	Stillwater MT tailings	Steve Wilson (USGS)	flotation tailings
MN BIF 1	74.312717	-93.382150	MN taconite mine 1	Kim Lapakko (MN DNR)	flotation tailings from taconite mine 1 - banded iron formation
MN BIF 2	74.312717	-93.382150	MN taconite mine 2	Kim Lapakko (MN DNR)	flotation tailings from taconite mine 2 - banded iron formation
MN BIF 3	74.312717	-93.382150	MN taconite mine 3	Kim Lapakko (MN DNR)	flotation tailings from taconite mine 3 - banded iron formation

to do: quant mineralogy, SPLP leaches, ABA, chemistry, (send splits to denver for misc chemistry analyses)  
 submit Atik 2 (Cu concentrate) to Denver for monomineralic studies.

#### Notes:

Total sulphur done by Leco at Assayers Canada

Duplicate analyses in parentheses

#### Calculations:

\*Sulphide sulphur is based on difference between total sulphur and sulphate sulphur.

\*\*MPA (Maximum Potential Acidity) is based on sulphide sulphur .

\*\*\*NNP (Net Neutralization Potential) is based on difference between neutralization potential (NP) and MPA.

#### References:

Reference for Mod ABA NP method (SOP No. 7150): MEND Acid Rock Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.

spike sample with ZnO for mineralogy XRD (unspiked)				Job No.	Lab No.	Field No.	C_CO2_C	C_CO2_C	C_ICPAES_MS_42	C_ICPAES_MS_42
Sample (g)	ZnO (g)	wt % ZnO	XRD date				CO2	CRBNT_C	AI	Ca
1.7999	0.1999	10.00%	09Nov13	quartz, albite, microcline, ph	MRP-1042E C-334464	Atik 1	0.04	0.01	7.95	2.26
				MRP-1042E C-334465		Atik 1-Dup	0.04	0.01	7.92	2.27
1.7992	0.1999	10.00%	09Nov13	chalcopyrite, pyrite, quartz, i	MRP-1042E C-334466	Atik 2	<0.01	<0.003	0.98	0.32
1.7994	0.1994	9.98%	09Nov13	quartz, albite, orthoclase, ph	MRP-1042E C-334467	Atik 3	0.06	0.02	8.49	2.19
1.8	0.1995	9.98%	09Nov13	pyrite, quartz, albite, anorthi	MRP-1042E C-334468	Atik 4	0.07	0.02	5.67	1.56
1.7993	0.1985	9.94%	09Nov13	quartz, enstatite, diopside, fi	MRP-1042E C-334469	Stillwater 1	0.21	0.06	9.65	7.07
1.7997	0.2001	10.01%	09Nov13	quartz, hematite, siderite, ta	MRP-1042E C-334470	MN BIF 1	4.79	1.31	0.23	1.08
1.7994	0.1996	9.98%	09Nov13	quartz, hematite, siderite, ta	MRP-1042E C-334471	MN BIF 2	4.3	1.17	0.25	1.13
1.8	0.1994	9.97%	09Nov13	quartz, hematite, siderite, ta	MRP-1042E C-334472	MN BIF 3	6.13	1.67	0.38	2.07

| C_ICPAES_MS_42 |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Fe             | K              | Mg             | Na             | S              | Ti             | Ag             | As             | Ba             | Be             |                |                |                |
| %              | %              | %              | %              | %              | %              | ppm            | ppm            | ppm            | ppm            |                |                |                |
| 6.59           | 3.54           | 1.23           | 1.68           | 2.57           | 0.39           | <1             | 3              | 731            | 1.6            |                |                |                |
| 6.64           | 3.55           | 1.22           | 1.65           | 2.71           | 0.39           | <1             | 4              | 1130           | 1.5            |                |                |                |
| >15            | 0.49           | 0.11           | 0.19           | >5             | 0.05           | >10            | 12             | 59             | <0.1           |                |                |                |
| 5.12           | 4.52           | 1.27           | 1.64           | 0.75           | 0.46           | 2              | 12             | 2160           | 1.5            |                |                |                |
| >15            | 2.97           | 0.75           | 1.1            | >5             | 0.29           | >10            | 59             | 81             | 0.8            |                |                |                |
| 5.53           | 0.4            | 6.16           | 0.97           | 0.1            | 0.12           | <1             | <1             | 585            | 0.3            |                |                |                |
| 12.3           | 0.07           | 2.49           | 0.03           | 0.02           | <0.01          | <1             | 11             | 22             | 0.8            |                |                |                |
| 13.8           | 0.11           | 2.31           | 0.03           | 0.02           | 0.01           | <1             | 29             | 20             | 1.4            |                |                |                |
| 11.9           | 0.12           | 1.68           | 0.06           | 0.03           | 0.02           | <1             | 28             | 20             | 1              |                |                |                |

| C_ICPAES_MS_42 |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Bi             | Cd             | Ce             | Co             | Cr             | Cs             | Cu             | Ga             | In             | La             |                |                |
| ppm            |
1.67	<0.1	127	60.2	19	8	411	21.5	0.11	54.1		
1.34	<0.1	133	62.7	21	8	545	21.4	0.12	55.5		
44.9	2.4	33.6	53.9	<1	<5	>10000	0.88	2.35	14.4		
3.02	0.1	147	25.4	24	10	1380	24.7	0.13	68.2		
19.3	0.4	101	513	14	5	4780	13.8	0.26	33.6		
0.09	0.4	>1000	183	612	<5	323	15.8	0.05	328		
<0.04	<0.1	6.17	7.1	7	<5	20.4	1.09	<0.02	2.7		
<0.04	<0.1	10.5	14.7	5	<5	32.2	1.36	<0.02	4.8		
0.04	<0.1	9.43	9.9	9	<5	61.8	1.51	<0.02	4.4		

| C_ICPAES_MS_42 |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Li             | Mn             | Mo             | Nb             | Ni             | P              | Pb             | Rb             | Sb             | Sc             |                |                |
| ppm            |
33	2140	12.4	12.3	13.5	2720	9	235	2.68	18.5		
32	2190	11.1	12.9	14.8	2850	10.7	232	2.86	18.7		
4	345	1100	0.6	72.1	160	64.9	6.7	43.4	0.4		
38	2120	17.9	15.6	16.3	2650	9.9	266	11.3	19.2		
23	1600	742	8.8	84.2	1510	12.4	149	35.7	10.8		
7	575	7.79	3.6	698	720	47	15.9	0.98	11.9		
3	5180	0.59	0.8	2.4	210	2.5	3	0.12	0.5		
4	6290	0.72	1.5	1.5	310	1	4.7	0.12	0.9		
8	4120	1.05	1.8	2.5	410	2.3	7	0.19	1.4		

| C_ICPAES_MS_42 |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Sn             | Sr             | Te             | Th             | Tl             | U              | V              | W              | Y              | Zn             |                |                |
| ppm            |
5.3	592	0.6	5.1	0.7	4.3	158	23.4	22	75		
5.1	581	0.4	5.3	0.7	4.6	153	24.9	22.7	73		
7.1	67	4.1	1.5	0.2	2.2	23	4.3	1.5	2190		
6.6	551	0.5	7.6	0.8	5.2	159	24.1	22.6	129		
4.6	282	5.6	2.9	0.5	8.7	108	15	17.8	197		
3.9	195	0.1	2.1	0.2	0.6	75	3.6	18.3	246		
0.3	22.5	<0.1	<0.2	<0.1	0.1	6	0.7	4.7	4		
0.3	36.8	<0.1	0.2	<0.1	<0.1	12	1	6.7	6		
0.3	37.5	<0.1	0.4	<0.1	0.1	10	1.2	5.9	6		

C_Org_C	C_Tot_C	C_Tot_S	C_WDXRF	ABA Sample ID												
%	%	%	Al2O3	CaO	Cr2O3	Fe2O3	K2O	LOI	MgO	MnO	Na2O	P2O5	SiO2	TiO2	%	
0	0.01	2.66	15.7	3.4	<0.01	10.2	4.75	3.61	2.19	0.32	2.37	0.63	54.2	0.73	Atik 1	
0	0.01	2.77	15.6	3.45	<0.01	10.4	4.8	3.49	2.18	0.32	2.35	0.65	54.6	0.75	Atik 1-Dup	
0.06	0.06	33.4	na	Atik 2												
0	0.02	0.85	17.1	3.27	<0.01	7.87	6.08	2.08	2.23	0.31	2.31	0.59	55.6	0.81	Atik 3	
0.01	0.03	17.8	10.6	2.24	<0.01	29.3	3.82	12.6	1.24	0.24	1.43	0.35	35.7	0.49	Atik 4	
0	0.06	0.07	18.3	10.5	0.2	8.27	0.48	0.26	10.3	0.09	1.26	0.16	48.2	0.22	Stilwater	
0.14	1.45	<0.05	0.36	1.6	<0.01	21.6	0.09	5.02	4.17	0.73	0.04	0.06	65.4	0.02	MN BIF 1	
0.14	1.31	<0.05	0.38	1.69	<0.01	29.2	0.15	4.28	3.87	0.88	0.05	0.08	58.5	0.03	NMN BIF 2	
0.1	1.77	<0.05	0.71	3.15	<0.01	19.7	0.14	5.08	2.88	0.6	0.09	0.1	66.6	0.04	MN BIF 3	

SOP 7160 Paste pH	LECO Total Sulphur (Wt.%)	SOP 7410 Sulphate Sulphur (Wt.%)	calculated Sulphide Sulphur* (Wt.%)	calculated Max. Potential Acidity** (Kg CaCO <sub>3</sub> /Tonne)	Mod. ABA NP SOP 7150 Neutralization Potential (Kg CaCO <sub>3</sub> /Tonne)	calculated Net Neutralization Potential*** (Kg CaCO <sub>3</sub> /Tonne)	SOP 7150 Fizz Rating	C_ICP16 AI %
6.0	2.82 (2.76)	0.05	2.77	86.6	17.0	-69.6	None	
6.0	3.10	0.04	3.06	95.6	16.6	-79.0	None	
3.94 (3.83)	32.00	0.10	31.90	996.9	0.1 (0.4)	-996.7	None	1.03
7.4	0.78	0.05	0.73	22.8	14.3 (14.4)	-8.5	None	
7.1	16.90	0.08	16.82	525.6	8.8	-516.8	None	
9.79 (9.72)	0.06	0.01	0.05	1.6	58.4 (57.4)	56.9	Slight	
7.9	0.04	<0.01	0.04	1.3	40.8	39.6	Moderate	
7.9	0.03	<0.01	0.03	0.9	41.3	40.4	Moderate	
8.0	0.05	<0.01	0.05	1.6	63.6	62.0	Strong	

C_ICP16 Ca %	C_ICP16 Fe %	C_ICP16 K %	C_ICP16 Mg %	C_ICP16 Na %	C_ICP16 P %	C_ICP16 Si %	C_ICP16 Ti %	C_ICP16 Ba ppm	C_ICP16 Cr ppm	C_ICP16 Mn ppm	C_ICP16 Nb ppm	C_ICP16 Sr ppm	C_ICP16 Y ppm	C_ICP16 Zr ppm
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0.34	25.8	0.58	0.13	0.5	0.01	2.87	0.05	860	<10	300	<10	80	<10	40
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<b>Field Number</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Collection Date</b>
Luikonlahti Magnesite #1	62.93364	28.71204	9/9/2008
Luikonlahti Magnesite #2	62.93364	28.71204	9/9/2008
Luikonlahti Pyritic #1	62.93364	28.71204	9/9/2008
Luikonlahti Pyritic #2	62.93364	28.71204	9/9/2008
Hamaslahti oxidized #1	62.46554	30.04266	9/10/2008
Hamaslahti oxidized #2	62.46554	30.04266	9/10/2008
Hamaslahti unoxidized #1	62.46554	30.04266	9/10/2008
Hamaslahti unoxidized #2	62.46554	30.04266	9/10/2008
Kotalahti #1	62.57909	27.62222	9/16/2008
Kotalahti #2	62.57895	27.62198	9/16/2008
Kotalahti #3	62.57895	27.62198	9/16/2008
Kotalahti #4	62.57826	27.6215	9/16/2008
07Cofer1A			
07Cofer1B			
07Cofer2			
07Cofer2R			
07Cofer2-1			
07Cofer3			

**Note: 1**

Total Sulphur by LECO furnace (at IPL).

\*Sulphide sulphur: Based on difference between total sulphur and sul

\*\*MPA: Based on sulphide-sulphur.

\*\*\*NNP: Based on difference between NP and MPA.

**Note: 2**

Reference for Mod ABA NP method (SOP No. 7150): MEND Acid Ro

**Note: 3**

Custom SO<sub>4</sub>-S extraction was performed as per SOP 7410 but with t

- 1) Used 2g of pulp sample instead of 5g.
- 2) Used concentrated HCl instead of 3N HCl.
- 3) Extended boiling time to 10 minutes instead of regular 1-2 minutes

<b>Location Description</b>	<b>pH</b>
Magnesite tailings overlying pyritic tailings. At pit location, approximately 42 cm to pyritic interface. Overall, thickness of magnesite is less near the dam. Magnesite tailings, same depth (5-25 cm below ground surface), two different locations in pit. Scraped side of pit with plastic spoon to get tailings directly into plastic bag.	8.17
Magnesite tailings overlying pyritic tailings. At pit location, approximately 42 cm to pyritic interface. Overall, thickness of magnesite is less near the dam. Magnesite tailings, same depth (5-25 cm below ground surface), two different locations in pit. Scraped side of pit with plastic spoon to get tailings directly into plastic bag.	8.17
Magnesite tailings overlying pyritic tailings. At pit location, approximately 42 cm to pyritic interface. Overall, thickness of magnesite is less near the dam. Pyritic tailings, same depth (45-65 cm below ground surface), two different locations in pit. Oxidized only--could not get to unoxidized tailings. Used coring device and scraped out into bag.	7.86
Magnesite tailings overlying pyritic tailings. At pit location, approximately 42 cm to pyritic interface. Overall, thickness of magnesite is less near the dam. Pyritic tailings, same depth (45-65 cm below ground surface), two different locations in pit. Oxidized only--could not get to unoxidized tailings. Used coring device and scraped out into bag.	7.86
Estimate water table at approx. 150 cm below ground surface. Till cover is approximaetly 20 cm. Depth of 26-50 cm below ground surface at two sides of the pit. Scraped side of pit with plastic spoon into bags.	4.95
Estimate water table at approx. 150 cm below ground surface. Till cover is approximaetly 20 cm. Depth of 26-50 cm below ground surface at two sides of the pit. Scraped side of pit with plastic spoon into bags.	4.95
Estimate water table at approx. 150 cm below ground surface. Till cover is approximaetly 20 cm. Depth is 137-158 cm below ground surface, probably fully saturated. Used coring device and scraped into bag.	5.25
Estimate water table at approx. 150 cm below ground surface. Till cover is approximaetly 20 cm. Depth is 77-108 cm below ground surface, probably not fully saturated. Used coring device and scraped into bag.	5.25
5-25 cm below ground surface, at dam created with tailings and no till cover, all oxidized, scraped side of pit into bag with plastic spoon	
10-35 cm below ground surface at a pit more interior in the tailings, oxidized zone above a hardpan layer, scraped side of pit into bag with plastic spoon.	4.79
33-48 cm below ground surface at a pit more interior in the tailings (same spot as #2), sample of hardpan layer, dug from bottom of pit with shovel.	3.61
Another interior site, trying to get to unoxidized tailings, 95-115 cm below ground surface, sample I sless oxidized than other samples but still appears to have some oxidation. Dug pit (5 cm of till at surface), using coring device and scraped into bag.	4.44

phate-sulphur.

ck Drainage Prediction Manual, MEND Project 1.16.1b (pages 6.2-11 to 17), March 1991.

he following changes:

3.

<b>Redox mV</b>	<b>State</b>	<b>Country</b>	<b>Depth</b>	<b>XRD Date</b>
58		Finland	5-25 cm	10/10/2008
58		Finland	5-25 cm	10/10/2008
88		Finland	45-65 cm	10/10/2008
88		Finland	45-65 cm	10/10/2008
282		Finland	26-50 cm	10/10/2008
282		Finland	26-50 cm	10/10/2008
178		Finland	137-158 cr	10/10/2008
178		Finland	77-108 cm	10/10/2008
		Finland	5-25 cm	10/10/2008
388		Finland	10-35 cm	10/10/2008
466		Finland	33-48 cm	10/10/2008
354		Finland	95-115 cm	10/10/2008



XRD Results	SPLP SPLP SPLP date	SPLP Solution	SPLP SPLP DO %	SPLP SPLP DO mg/L	SPLP ampoul DO mg/L
magnesite, dolomite, chlorite, quartz, talc, amphibole (ferroactinolite?)	11/5/2008	WSP 4	56.4	4.93	6
magnesite, chlorite, dolomite, quartz, talc, amphibole (ferroactinolite?), smithsonite	11/5/2008	WSP 4	86.6	7.6	6
magnesite, dolomite, chlorite, quartz, talc, smithsonite, fayalite?	11/4/2008	WSP 4	49.5	4.22	10
magnesite, dolomite, chlorite, talc, quartz, smithsonite	11/4/2008	WSP 4	52.2	4.45	8
quartz, chlorite, pyrite, goethite, sphalerite, phlogopite, anorthite, albite	11/4/2008	WSP 4	53.3	4.58	6
quartz, pyrite, chlorite, goethite, sphalerite/wurtzite, phlogopite, albite, anorthite	11/4/2008	WSP 4	47.7	4.11	8
quartz, pyrrhotite, phlogopite, hornblende, chlorite, albite, gypsum	11/4/2008	WSP 4	41	3.5	5
quartz, chlorite, pyrrhotite, phlogopite, albite, hornblende	11/4/2008	WSP 4	38.5	3.31	4
quartz, albite, chlorite, hornblende, jarosite, anthophyllite, talc, anorthite, phlogopite, sepiolite	11/5/2008	WSP 4	56.9	4.98	6
quartz, albite, chlorite, enstatite, talc, phlogopite, tremolite, anthophyllite, sepiolite	11/5/2008	WSP 4	47.7	4.19	8
quartz, albite, enstatite, phlogopite, chlorite, talc, anthophyllite, tremolite, sepiolite	11/5/2008	WSP 5	46.7	4.11	6
quartz, tremolite, albite, chlorite, enstatite, talc, anthophyllite, anorthite, phlogopite	11/5/2008	WSP 5	48.1	4.24	8



SPLP pH	SPLP Cond. uS/cm	SPLP ORP mV	SPLP tot alk mg/L CaCO <sub>3</sub>	SPLP alk mg/L CaCO <sub>3</sub>	SPLP HCO <sub>3</sub> mg/L CaCO <sub>3</sub>	SPLP CO <sub>3</sub> alk mg/L CaCO <sub>3</sub>	Field No.	Job No.
9.06	35	113.7	11	3	8	LuikonlahtiMag1	MRP-09786	
9.14	38	56.4	10	2	8	LuikonlahtiMag2	MRP-09786	
8.78	57	-21.1	14	14	0	LuikonlahtiPy1	MRP-09786	
8.66	54	-11.5	15	15	0	LuikonlahtiPy2	MRP-09786	
2.81	650	422.7				HamaslahtiOx1	MRP-09786	
2.83	600	418.3	1.3	1.3	0	HamaslahtiOx2	MRP-09786	
4.36	859	195.2				HamaslahtiUnox1	MRP-09786	
4.68	167	125.6				HamaslahtiUnox2	MRP-09786	
3.44	158	369.9				Kotalahti1	MRP-09786	
3.71	107	321.2				Kotalahti2	MRP-09786	
3.4	226	408				Kotalahti3	MRP-09786	
4.01	96	335.5				Kotalahti4	MRP-09786	
						07Cofer1A	MRP-08565	
						07Cofer1B	MRP-08565	
						07Cofer2	MRP-08565	
						07Cofer2R	MRP-08565	
						07Cofer2-1	MRP-08565	
						07Cofer3	MRP-08565	



Lab No.	C_CO2 C %	C_CO2 C %	CRBNT_CAI %	Ca %	Fe %	K %	Mg %	Na %	S %
C-323671	29.7	8.11	0.74	2.91	4.3	0.04	>15	0.02	0.23
C-323672	31.4	8.57	0.62	2.46	4.78	0.03	>15	0.01	0.35
C-323673	31.2	8.52	0.55	2.33	5.19	0.02	>15	0.01	0.38
C-323674	31.6	8.62	0.52	2.28	5.18	0.03	>15	0.02	0.39
C-323675	<0.01	<0.003	1.81	0.11	9.16	0.24	1.26	0.33	>5
C-323676	<0.01	<0.003	1.91	0.1	9.07	0.25	1.34	0.32	>5
C-323677	<0.01	<0.003	3.83	0.75	7.4	0.59	2.96	0.25	2.25
C-323678	<0.01	<0.003	2.87	0.23	8.59	0.31	2.53	0.16	2.51
C-323679	<0.01	<0.003	5.23	3.92	7.84	0.99	5.66	1.52	0.67
C-323680	0.02	0.01	3.73	2.62	8.3	0.5	9.15	0.91	0.61
C-323681	<0.01	<0.003	3.91	2.55	8.67	0.55	8.78	0.97	0.78
C-323682	0.02	0.01	4.65	3.18	6.01	0.78	9.2	1.18	0.16
C-306891	4.3 4.07 3.63 3 3.65 4.65	0.13	5.97	1.89	0.93	0.67	2.62		
C-306892		0.15	3.41	1.36	0.74	0.59	0.69		
C-306893		0.09	11.6	1.92	1.1	0.65	9.67		
C-306894		0.11	12.7	1.63	1.1	0.57	11.2		
C-306895		0.11	8.86	2.21	1.06	0.65	4.85		
C-306896		0.27	6.23	2.09	0.9	0.89	3.25		



| C_ICPAES |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Ti %     | Ag ppm   | As ppm   | Ba ppm   | Be ppm   | Bi ppm   | Cd ppm   | Ce ppm   | Co ppm   | Cr ppm   |
| 0.05     | <1       | 48       | 8        | <0.1     | 0.04     | 0.2      | 0.93     | 34.5     | 1270     |
| 0.07     | <1       | 71       | <5       | <0.1     | 0.09     | 0.2      | 0.95     | 38.5     | 1620     |
| 0.05     | <1       | 87       | <5       | <0.1     | 0.07     | 0.2      | 1.47     | 42.1     | 1450     |
| 0.05     | <1       | 83       | <5       | <0.1     | 0.07     | 0.2      | 2.15     | 41.4     | 1460     |
| 0.1      | 2        | 102      | 51       | 0.2      | 5.53     | <0.1     | 16.8     | 38.8     | 19       |
| 0.1      | 2        | 103      | 51       | 0.2      | 5.7      | <0.1     | 15.3     | 39.4     | 16       |
| 0.14     | 2        | 17       | 103      | 0.5      | 2.25     | 2.5      | 12.8     | 69.7     | 39       |
| 0.18     | 2        | 15       | 48       | 0.3      | 2.36     | 14.6     | 20.1     | 72.7     | 26       |
| 0.33     | <1       | 1        | 307      | 1        | 0.33     | 0.3      | 21.7     | 30.7     | 697      |
| 0.18     | <1       | 2        | 170      | 0.7      | 0.55     | 0.3      | 15.7     | 36.1     | 1270     |
| 0.18     | <1       | 2        | 177      | 0.8      | 0.57     | 0.3      | 12.9     | 37.4     | 1130     |
| 0.21     | <1       | 1        | 170      | 1.1      | 0.33     | 0.3      | 17.5     | 41.2     | 1080     |
| 0.13     | 11       | 136      | 860      | 1        | 34.3     | 0.3      | 30.4     | 1        | 9        |
| 0.16     | 4        | 57       | 531      | 1        | 11.3     | 0.2      | 17.4     | 1.1      | 8        |
| 0.07     | 54       | 276      | 180      | 1        | 262      | 1.4      | 25       | 1.1      | <1       |
| 0.06     | 54       | 356      | 175      | 1.1      | 316      | 0.9      | 19.1     | 2.1      | 1        |
| 0.09     | 46       | 252      | 698      | 1.1      | 268      | 0.3      | 28.8     | 0.4      | 5        |
| 0.15     | 16       | 202      | 611      | 1.7      | 48.2     | 1.9      | 32.4     | 1.2      | 5        |



| C_ICPAES |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Cs ppm   | Cu ppm   | Ga ppm   | In ppm   | La ppm   | Li ppm   | Mn ppm   | Mo ppm   | Nb ppm   | Ni ppm   |
| <5       | 2.4      | 1.96     | <0.02    | <0.5     | 1        | 1050     | 0.15     | 0.6      | 439      |
| <5       | 2.7      | 1.76     | <0.02    | <0.5     | <1       | 1120     | 0.12     | 0.7      | 488      |
| <5       | 3.2      | 1.82     | <0.02    | 0.7      | <1       | 1120     | 0.19     | 0.6      | 462      |
| <5       | 5.3      | 1.62     | <0.02    | 1.1      | <1       | 1060     | 0.23     | 0.6      | 465      |
| <5       | 593      | 6.54     | 0.16     | 8.8      | 7        | 159      | 3.51     | 1.3      | 4.2      |
| <5       | 644      | 7.77     | 0.21     | 8        | 7        | 166      | 3.68     | 1.4      | 2.6      |
| <5       | 504      | 12       | 0.13     | 6.7      | 17       | 395      | 4.71     | 2.8      | 35.8     |
| <5       | 675      | 9.86     | 0.27     | 10.9     | 12       | 300      | 4.04     | 2.6      | 29.1     |
| <5       | 158      | 13.1     | 0.08     | 11.8     | 14       | 1180     | 0.33     | 5.1      | 193      |
| <5       | 341      | 9.25     | 0.06     | 8.2      | 11       | 1080     | 0.52     | 2.6      | 318      |
| <5       | 423      | 9.32     | 0.06     | 6.9      | 12       | 1030     | 0.32     | 2.5      | 336      |
| <5       | 224      | 10.6     | 0.06     | 8.6      | 19       | 1230     | 0.26     | 2.9      | 480      |
| <5       | 951      | 12.9     | 4.37     | 14.2     | 4        | 780      | 8.4      | 4.2      | 1.9      |
| <5       | 450      | 11.1     | 1.76     | 8.1      | 4        | 297      | 5.17     | 4.5      | 2        |
| <5       | 7860     | 11.3     | 16.2     | 11.3     | 2        | 69       | 12.5     | 2.7      | <0.5     |
| <5       | 11400    | 10.1     | 20.5     | 8.8      | 2        | 76       | 16       | 2.4      | <0.5     |
| <5       | 6890     | 11.5     | 19.4     | 13.8     | 1        | 127      | 11.5     | 3.3      | <0.5     |
| <5       | 2310     | 14.5     | 5.86     | 15.5     | 4        | 314      | 6.26     | 4.4      | <0.5     |



C_ICPAES	C_ICPAES	C_ICPAES	C_ICPAES	C_ICPAES	C_ICPAES	C_ICPAES	C_ICPAES	C_ICPAES	C_ICPAES
P ppm	Pb ppm	Rb ppm	Sb ppm	Sc ppm	Sn ppm	Sr ppm	Te ppm	Th ppm	Tl ppm
<50	1	2.2	0.41	8	0.1	25.1	<0.1	<0.2	<0.1
<50	1	1.5	0.55	8	<0.1	22.6	<0.1	<0.2	<0.1
<50	<0.5	1.2	1.05	8.2	0.1	21.1	<0.1	<0.2	<0.1
<50	0.8	1.3	1	7.5	0.1	20.7	<0.1	<0.2	<0.1
150	90.7	8.8	1.56	4.4	1.5	16.9	0.5	1.5	2.7
200	87.9	9.7	1.57	4.8	1.5	16	0.6	1.5	3.2
300	73.5	24	0.63	9.6	1.3	26.2	0.7	4	1
390	22.5	11.9	0.19	7	1	13.1	0.4	2.7	0.6
570	9	35.5	0.08	29.8	2.1	281	0.1	2.9	0.3
250	7.4	20.9	0.08	27	1.4	134	0.2	2.7	0.2
230	8.5	23.4	0.09	26	1.3	142	0.2	2.1	0.2
360	8.7	36.3	0.11	31.1	2.1	182	0.1	3	0.3
210	2560	50.8	18.4	9.6	7.2	37.5	0.2	4.2	5.5
140	768	39.1	8.29	8	4.1	31.7	<0.1	3.6	3.1
70	10200	54.7	73.3	7.8	40.9	40	0.2	2.9	12.4
90	10600	49.2	76.8	6.6	54.2	42.4	0.3	2.6	12.4
90	8840	64.1	59.1	8.2	44.1	45.3	0.1	4	15.2
220	3400	63.4	25.7	9.3	13.4	64.6	0.1	4.8	6.3



C_ICPAES_U_ppm	C_ICPAES_V_ppm	C_ICPAES_W_ppm	C_ICPAES_Y_ppm	C_ICPAES_Zn_ppm	C_Org_C_Organic_C_percent	C_Tot_C_C_percent	C_Tot_S_S_percent	C_WDXRF_Al2O3_percent	C_WDXRF_CaO_percent
0.2	29	0.3	1.3	55	<0.01	7.89	0.25	1.35	4.36
0.1	30	0.3	1.2	65	0.08	8.65	0.44	1.15	3.67
<0.1	29	0.2	1.5	64	0.68	9.2	0.48	0.97	3.44
0.3	29	0.3	1.4	69	0.32	8.94	0.52	0.93	3.38
0.5	31	0.7	3.2	446	0.08	0.08	6.31	3.43	0.16
0.5	37	0.7	2.9	461	0.1	0.1	6.67	3.77	0.15
1.5	81	0.9	7.5	1180	0.18	0.18	3.43	7.48	1.1
1.1	54	0.7	6.4	1060	0.05	0.05	3.82	5.48	0.33
0.6	152	0.4	10.9	70	0.06	0.06	0.69	9.98	6.13
0.6	107	0.4	8.6	66	0.05	0.06	0.61	7.27	3.93
0.6	106	0.4	7.6	64	0.06	0.06	0.86	7.47	3.88
0.8	126	0.5	9.7	67	0.04	0.05	0.18	8.73	4.76
1.4	39	1.4	8	336				8.89	0.19
1.2	31	1.2	5.1	212				8.19	0.22
1.5	17	1.8	3.3	865				7.74	0.11
1.5	14	1.5	3	680				6.54	0.15
1.7	15	1.7	4.4	428				7.84	0.15
1.5	22	1.6	6.4	922				9.62	0.41



| C_WDXRF |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Cr2O3 % | Fe2O3 % | K2O %   | LOI %   | MgO %   | MnO %   | Na2O %  | P2O5 %  | SiO2 %  | TiO2 %  |
| 0.3     | 6.77    | 0.05    | 30.7    | 33.7    | 0.13    | 0.04    | 0.01    | 21.9    | 0.1     |
| 0.34    | 7.5     | 0.05    | 31.9    | 34      | 0.14    | 0.05    | <0.01   | 19.5    | 0.15    |
| 0.32    | 8       | 0.03    | 33.6    | 34.7    | 0.14    | 0.04    | 0.01    | 16.9    | 0.1     |
| 0.33    | 7.84    | 0.03    | 32.7    | 34.4    | 0.13    | 0.05    | 0.01    | 18.6    | 0.1     |
| <0.01   | 13.9    | 0.31    | 8.41    | 2.03    | 0.02    | 0.47    | 0.03    | 70.8    | 0.41    |
| <0.01   | 14.2    | 0.33    | 9.04    | 2.35    | 0.02    | 0.45    | 0.05    | 69.1    | 0.41    |
| <0.01   | 11.7    | 0.77    | 5.03    | 5.11    | 0.05    | 0.4     | 0.07    | 67.5    | 0.44    |
| <0.01   | 13.5    | 0.39    | 3.91    | 4.21    | 0.04    | 0.24    | 0.09    | 71      | 0.49    |
| 0.14    | 12.3    | 1.18    | 4.07    | 9.82    | 0.14    | 1.97    | 0.12    | 52.9    | 0.61    |
| 0.26    | 13.4    | 0.63    | 5.18    | 15.8    | 0.13    | 1.18    | 0.05    | 51.5    | 0.33    |
| 0.25    | 13.8    | 0.68    | 5.73    | 15.2    | 0.12    | 1.27    | 0.05    | 51.5    | 0.32    |
| 0.24    | 9.33    | 0.96    | 2.49    | 15.6    | 0.14    | 1.53    | 0.08    | 55.7    | 0.39    |
| <0.01   | 9.29    | 2.12    | 7.96    | 1.82    | 0.16    | 0.85    | 0.04    | 66.1    | 0.34    |
| <0.01   | 5.51    | 1.58    | 4.88    | 1.35    | 0.06    | 0.71    | 0.03    | 76.2    | 0.36    |
| <0.01   | 18.6    | 2.26    | 14.9    | 2.01    | 0.02    | 0.84    | 0.02    | 49.6    | 0.3     |
| <0.01   | 21.8    | 1.86    | 16.7    | 2.07    | 0.02    | 0.5     | 0.04    | 45.1    | 0.26    |
| 0.01    | 14      | 2.5     | 14.5    | 2.15    | 0.03    | 0.54    | 0.02    | 53.6    | 0.27    |
| <0.01   | 9.93    | 2.39    | 8.48    | 1.62    | 0.06    | 1.38    | 0.05    | 63.7    | 0.36    |



S. No:	Sample ID	Paste pH	Total Sulphur (Wt.%)	Sulphate Sulphur (Wt.%)	Sulphide Sulphur* (Wt.%)	Minimum Pote CaCO3/To	Potential neutralizat CaCO3/To
1	Luikonlahti Mag 1	9.3	32 (Dup 0.3)	<0.01	0.32	10.0	187.4
2	Luikonlahti Mag 2	9.4	0.50	<0.01	0.50	15.6	183.3
3	Luikonlahti Py 1	9.2	0.52	<0.01	0.52	16.3	168.0
4	Luikonlahti Py 2	9.0	0.56	0.01	0.55	17.2	165.8
5	Hammaslahti ox 1	3.5	6.81	0.21	6.60	206.3	-2.8
6	Hammaslahti ox 2	3.0	6.95	0.23	6.72	210.0	-4.1
7	Hammaslahti unox 1	4.6	3.61	0.27	3.34	104.4	0.1
8	Hammaslahti unox 2	4.2	3.82	0.06	3.76	117.5	1.9
9	Kotalahti 1	3.7	0.73	0.41	0.32	10.0	-0.3
10	Kotalahti 2	4.1	0.72	0.21	0.51	15.9	3.0
11	Kotalahti 3	3.82 (Dup 3.79)	0.90	21 (Dup 0.2)	0.69	21.6	59 (Dup 1.5)
12	Kotalahti 4	5.3	0.19	0.05	0.14	4.4	7.9
13	07Cofer1A	3.2	2.34	1.20	1.14	35.6	-3.3
14	07Cofer1B	3.4	0.68	0.54	0.14	4.4	-3.4
15	07Cofer2	2.6	10.20	1.85	8.35	260.9	-6.5
16	07Cofer2R	2.6	12.90	1.69	11.21	350.3	-6.7
17	07Cofer2-1	2.7	4.90	2.37	2.53	79.1	-6.5
18	07Cofer3	3.1	3.50	1.14	2.36	73.8	-4.8



Neutraliza	Fizz	Custom
Potential*** CaCO3/Tonne)		Sulphate Sulphur (Wt.%)
177.4	None	
167.7	None	
151.7	None	
148.6	None	
-209.0	None	
-214.1	None	
-104.2	None	
-115.6	None	
-10.3	None	0.45
-12.9	None	
-19.8	None	
3.5	None	
-38.9	None	1.41
-7.8	None	0.57
-267.5	None	1.98
-357.0	None	2.14
-85.6	None	2.50
-78.5	None	1.24

<b>Sample</b>	<b>Description</b>	<b>Source</b>	<b>Lat</b>	<b>Long</b>
GTS-2	Gold tailings	GTS-2 is a gold tailings sample c	48.44886111	81.21055556
GTS-2 Dup	Gold tailings (duplicate)		48.44886111	81.21055556
KZK-1	Acid base accounting material	KZK-1 is a mixture of drill cores f	61.67636111	130.6369806
NBM-1	Acid base accounting material	The raw material used to prepare NBM-1 w	54.94444444	126.1572222
RTS-1	Sulphide tailings sample	The materials identified as RTS-1 and RTS	48.45816667	79.05050278
RTS-2	Sulphide tailings sample	RTS-2 is a product provided by INCO Ltd.,	46.46867222	81.131675
RTS-4	Sulphide tailings sample	RTS-4 is a pyrrhotite concentrate donated t	46.46867222	81.131675
TLS-1	Unoxidized tailings	TLS-1 is a tailings material from i	46.47875	81.05415278
UMT-1	Ultramafic ore tailings	UMT-1 was prepared and certified in coope	49.48361111	121.4847222
UTS-1	Uranium tailings sample	UTS-1 is from Madawaska Mines Ltd., near	45.02264444	77.92087778
UTS-2	Uranium tailings sample	UTS-2 is from Rio Algom Ltd. in Elliot Lake.	46.40738889	82.73663889
UTS-3	Uranium tailings sample	UTS-3 is from Eldorado Nuclear Ltd., at Be	59.56636111	145.0057778
UTS-4	Uranium tailings sample	UTS-4 is from Eldor Mines at Rabbit Lake,	58.18333333	103.7030556

XRD Date	XRD min	Leco S	Leco S du Leco S avg.	
		wt %	wt %	wt %
11/21/2007	quartz, chlorite, dolomite, ankerite, muscovite, py	0.98704	0.73191	0.859475
11/21/2007	quartz, ankerite, albite, rutile, zircon, biotite?, mus	0.87339	0.82125	0.84732
11/21/2007	quartz, albite, biotite, orthoclase, ankerite, kaolini	0.24159	0.276	0.258795
11/21/2007	quartz, chlorite, magnetite, riebeckite, gypsum, m	1.7888	1.7507	1.76975
11/21/2007	goethite, quartz, jarosite, riebeckite, sulfur (15 s);	20.18	20.268	20.224
11/21/2007	pyrrhotite	37.868	37.395	37.6315
11/21/2007	quartz, chlorite, anorthite, biotite, hornblende	1.9422	1.9422	1.9422
11/21/2007	tremolite, enstatite, chlorite	0.08694	0.12384	0.10539
11/21/2007	quartz, albite, hornblende, orthoclase, microcline,	1.071	1.0749	1.07295
11/21/2007	quartz, pyrite, vanuralite?, rutile, gypsum, muscov	3.3395	3.4902	3.41485
11/21/2007	quartz, albite, calcite, chlorite, garnet	0.22728	0.19852	0.2129
11/21/2007	quartz, chlorite, gypsum, umohoite, muscovite	1.9066	1.8822	1.8944

Al <sub>2</sub> O <sub>3</sub> wt %	CaO wt %	Fe <sub>2</sub> O <sub>3</sub> tot wt %	K <sub>2</sub> O wt %	MgO wt %	MnO wt %	Na <sub>2</sub> O wt %	P <sub>2</sub> O <sub>5</sub> wt %	SiO <sub>2</sub> wt %
12	5.7	11.1	2.2	4.3		0.9	0.2	50
12	5.7	11.1	2.2	4.3		0.9	0.2	50

4.4	6.2	13.6	0.09	23	0.2	0.65	0.03	51.87
								49

TiO <sub>2</sub> wt %	LOI wt %	Loss of m %	H <sub>2</sub> O %	Ag µg/g	As µg/g	Ba µg/g	Bi µg/g	Cd µg/g	Cr µg/g
0.75	9.3			1	110	190			250
0.75	9.3			1	110	190			250
	4.26	0.07							
	3.45	0.32							
			1.5	<3	8.2	123	81	2	50
			1.7	<2	6.3	72	3	2	125
			0.16	<2	207	27	3.3	5	100
0.4	1.8								
						324			
						464			
						212			
					38.0	65.0			

Cu µg/g	Ni µg/g	Se µg/g	Sr µg/g	V µg/g	Zn µg/g	Zr µg/g	Pb µg/g	Co µg/g	U µg/g
100	90		95	40	210				
100	90		95	40	210				
595	22	40	60		553	110	105	16.6	
670	2430	57	30		117	20	45	72	
280	7940	100	12		158	10	60	186	
743	1396						77		
								49	
								56	
								513	
								1010.0	

Th µg/g	Au µg/g	Au oz/ton	Au ng/g	Pt ng/g	Pd ng/g	Rh ng/g	Ru ng/g	Ir ng/g	Os ng/g
	0.263	0.0077							
	0.263	0.0077							
				262	<70	<20			
				38	217	136			
				21	55	15			
				48	129	106	9.5	10.9	8.8
138									8.0
174									
10									
15.4									

Re ng/g	Al %	Ca %	Ba %	Co %	Cr %	Cu %	C tot wt %	CO2 %	CO3 %
							2.4		
							2.4		
	7.37	1.80	0.27				0.95	3.37	4.22
	7.86	2.30	0.117				0.79		0.50
	4.26	2.67					<0.9	<0.1	
	0.83	0.53					<2	<0.2	
	0.339	0.327					<1.5	<0.7	
3.0	6.92	4.73		0.008	0.030	0.078			
	6.24	5.24							
	2.71	0.42							
	5.8	4.03							
	6.29	1.75							

Fe (total) %	Fe TITR %	K %	Mg %	Mn %	Na %	Ni %	P %	Si %	Pb %
3.30		3.55	0.95	0.07	1.18		0.08	29.38	
4.09		2.36	1.39	0.046	2.70		0.10	28.47	
19.64	19.89	0.52	2.67	0.19	0.50		0.06	19.89	
37.4	37.90	0.12	0.351	0.04	0.22		0.02	2.92	
56.7	56.64	0.04	0.179	0.015	0.07		0.02	0.998	
10.51		1.025	3.45	0.120	1.690	0.151	0.087		0.023
4.87									
3.20									
3.25									
2.62									

Ti %	Zn %	Th-230 Bq/g	Ra-226 Bq/g	Pb-210 Bq/g	Po-210 Bq/g	Th-232 Bq/g	Ra-228 Bq/g	Th-228 Bq/g
0.35								
0.335								
0.40								
0.16								
0.08								
0.553	0.013							
		3.6	3.67	3.25	3.1	0.68	0.68	0.71
		4.4	5.6	4.55	4.4	0.88	1.0	0.92
		11.3	13.3	12.6	11.8			
		22.9	38.6	32.4	30.8			

S tot wt %	S element: %	S sulfide %	Sulphate Mass %	AP-S kgCaCO3/l	NP-MS-s kgCaCO3/l	NP-S-m kgCaCO3/l	NP-S-s kgCaCO3/l
0.8							
0.8							
0.80			0.01	24.9	58.9	64.8	59.0
0.28			0.02	8.73	46.6	72.1	49.6
1.66	0.50	0.0	1.26				
18.95	14.47	0.61	3.87				
35.9	0.43	35.2	0.27				
1.81							
0.2							
1.00			2.64				
3.23			0.84				
0.23							
1.80			5.21				

paste pH	AP-MS	NP-MS-m
t	kgCaCO <sub>3</sub> /t	kgCaCO <sub>3</sub> /t

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8.8	24.6	61.6
8.45	8.48	52.3



Field Number	Latitude	Longitude	Collection Date	Location Description	State	Country	Depth	XRD Date
NZNewmontA	37.38592	175.84292	12/16/2005	Fine-grained tailing from the Martha mine.		New Zealand	surface	6/21/2007
Giant South	62.50034	-114.34789	5/22/2007	Tailings from south pile at the Giant Mine.		Canada	1 foot	7/27/2007
Giant NW	62.52405	-114.35463	5/22/2007	Tailings from northwest pile at the Giant Mine.		Canada	1 foot	7/27/2007
Giant Central	62.50798	-114.34223	5/22/2007	Tailings from central pile at the Giant Mine.		Canada	1 foot	7/27/2007
Giant Central-D								
Giant North	62.51246	-114.33766	5/22/2007	Tailings from north pile at the Giant Mine.		Canada	1 foot	7/27/2007
Ptarmigan	63.51765	-114.20823	5/22/2007	Tailings from the Ptarmigan mine.		Canada	1 foot	7/27/2007
Anvil-Faro	62.34058	-133.40027	4/1/2007	Tailings from the Faro mine.		Canada	1 foot	6/21/2007
USGS-CLTPC	44.34142	-68.80528	4/25/2007	Course-grained tailings from near edge of pile at the Callahan mine.	ME	United States	1 foot	6/21/2007
USGS-CLTPF	44.34339	-68.80597	4/25/2007	Fine-grained tailings from the Callahan mine.	ME	United States	1 foot	6/21/2007
CLHN-TP-2	44.34306	-68.80556	7/19/2005	Fine grained tailings from the Callahan mine.	ME	United States	1 foot	6/21/2007
	43.83127	-72.32618	7/20/2004	Elizabeth mine. Exposed tailings from front face of TP1 after Conti excavated area to regrade.	VT	United States	surface	6/21/2007
TP1-N								
TP1-S	43.82332	-72.32990	7/20/2004	Elizabeth mine. Tailings from TP1 near base of TP2.	VT	United States	1 foot	6/21/2007
02JH99	44.28025	-114.40975						7/27/2007
05JH99	44.27616667	-114.4083889						7/27/2007
06JH99	44.27616667	-114.4083889						7/27/2007
08JH99	44.27616667	-114.4083889						7/27/2007
01TP1-2								
TP3A								
04PKHL-7-D								
Giant Pond								

#### ABA information

##### Note: 1

\*Based on difference between total sulphur and sulphate-sulphur

\*\*Based on sulphide-sulphur

Total Sulphur by LECO furnace

##### Note: 2

<sup>1</sup>NP Method Used: Modified ABA Method (Lawrence et al., 1989)

<sup>2</sup>Method Used for NP: Modified Sobek - Peroxide Siderite Correction for Sobek Method (Skousen 1997).

##### Note: 3

Custom SO<sub>4</sub>-S extraction was performed as per SOP 7410 but with the following changes:

- 1) Used 2g of pulp sample instead of 5g.
- 2) Used concentrated HCl instead of 3N HCl.
- 3) Extended boiling time to 10 minutes instead of regular 1-2 minutes.

XRD Results	Job No.	Lab No.	Field No.	C_ICPAES_N	C_ICPAES_N	C_ICPAES_N	C_ICPAES_N	C_ICPAES_N	C_ICPAES_N
				Al	Ca	Fe	K	Mg	Na
				%	%	%	%	%	%
quartz, sanidine, pyrite, albite, muscovite, chlorite	MRP-07945	C-295888	NZNewmontA	4.96	0.45	2.71	2.99	0.76	0.44
quartz, chlorite, calcite, muscovite, albite, dolomite, microcline	MRP-07945	C-295889	Giant South	5.46	7.01	7.09	1.14	3.05	0.6
chlorite, dolomite, quartz, calcite, muscovite, microcline, hematite	MRP-07945	C-295890	Giant NW	5.22	5.52	7.49	1.31	1.88	0.38
quartz, dolomite, chlorite, calcite, gypsum, albite, muscovite,	MRP-07945	C-295891	Gaint Central	4.47	6.24	6.48	1.25	3.15	0.36
quartz, chlorite, muscovite, dolomite, gypsum, calcite, microcline	MRP-07945	C-295892	Gaint North	7.06	5.18	5.93	2.03	3.68	0.23
quartz, chlorite, albite, phlogopite	MRP-07945	C-295893	Ptarmigan	1.69	0.39	1.3	0.46	0.41	0.39
quartz, muscovite, pyrite, marcasite, pyrrhotite, kaolinite, jarosite	MRP-07945	C-295894	Anvil-Faro	2.26	0.38	27.5	0.64	0.26	0.06
quartz, pyrite, calcite, talc, muscovite, sphalerite, hornblende,	MRP-07945	C-295895	USGS-CLTPC	5.24	6.12	5.53	0.97	8.22	0.33
quartz, chlorite, calcite, pyrite, talc, muscovite, albite	MRP-07945	C-295896	USGS-CLTPF	5.6	2.84	6.75	0.68	11.7	0.09
quartz, calcite, pyrite, chlorite, biotite, talc, vermiculite, muscovite	MRP-07945	C-295897	CLHN-TP-2	5.14	5.47	3.78	0.78	12.7	0.2
quartz, muscovite, pyrrhotite, chlorite, albite, hornblende, gypsum	MRP-07945	C-295898	TP1-N	3.78	2.41	22.3	0.85	1.09	1.12
quartz, dolomite, chlorite, talc, vermiculite, pyrite, hornblend	MRP-07945	C-295899	TP1-S	6.15	1.35	16.3	1.6	1.45	1.11
quartz, dolomite, siderite, sphalerite, halloysite									
quartz, dolomite, siderite, sphalerite, schaeferite, halloysite									
quartz, calcite, grossular, sphalerite, fluorite, hedenbergite, biotite, albite, chlorite, orthoclase, others?									
quartz, dolomite, sphalerite, siderite, schaeferite, pyrite									





C_ICPAES_N	C_ICPAES_N	C_ICPAES_N	C_ICPAES_N	C_ICPAES_N	C_ICPAES_N	C_WDXRF	TI	U	V	W	Y	Zn	Al2O3	CaO	Cr2O3	Fe2O3	K2O	LOI	MgO	MnO	Na2O								
ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	Zn	Al2O3	CaO	Cr2O3	Fe2O3	K2O	LOI	MgO	MnO	Na2O
2.3	0.7	65	4	8.3	214	9.29	0.6	0.02	3.6	3.58	3.25	1.24	0.36	0.6															
0.7	0.3	192	2.9	8	213	10.3	9.46	0.02	9.05	1.33	10.7	5.01	0.17	0.78															
0.6	0.3	132	6	6.1	301	9.4	7.78	0.02	10.4	1.37	9.17	4.4	0.16	0.63															
0.8	0.2	164	1.9	7.5	267	8.75	9.1	0.01	9.03	1.53	12.3	5.41	0.17	0.49															
1.3	0.4	251	5.8	9.6	224	13.5	7.57	0.03	8.3	2.43	11.4	6.2	0.15	0.3															
0.2	0.4	25	12.4	3	288	3.5	0.48	<0.01	1.69	0.58	0.8	0.78	0.02	0.53															
16.9	2.5	74	5.2	4.6	7940	4.23	0.44	<0.01	34.3	0.8	21.7	0.47	0.1	0.35															
3.9	3.8	32	1.3	59.4	3150	9.54	8.31	<0.01	6.91	1.1	7.69	13	0.23	0.53															
2.8	4.9	23	1.5	66.7	5500	10.3	4.24	<0.01	8.6	0.78	8.99	18.4	0.23	0.29															
2.5	4.9	34	1	33.5	8740	9.22	7.13	<0.01	4.78	0.85	8.99	19.3	0.25	0.53															
0.5	1.1	67	0.4	15.9	2810	7.74	3.3	0.01	29.1	1.13	8.08	2.05	0.18	1.6															
0.9	2	118	0.6	10.8	2400	12.5	1.89	0.03	19.7	2.04	11.6	2.53	0.05	1.63															

C_WDXRF P2O5	C_WDXRF SiO2	C_WDXRF TiO2	Job No.	Lab No.	Field No.	Se Hyd Se
%	%	%				ppm
0.04	75.4	0.31				
0.11	48.8	0.91				
0.12	52.7	0.98				
0.07	49.9	0.76				
0.1	47.9	0.82				
0.06	90.5	0.13				
0.12	32.3	0.08				
0.04	46.7	0.28				
0.04	42.8	0.2				
0.04	43.3	0.15				
0.14	43	0.64				
0.18	46.5	0.62				

CanTEST S. No:	Sample ID	Paste pH	Total Sulphur	Sulphate Sulphur	Sulphide Sulphur*
Detection Limits		0.1	(Wt.%)	(Wt.%)	(Wt.%)
CANTEST Method Number		7160	LECO	7410	Calculation
1	NZNewmontA	8.4	0.70	0.07	0.63
2	Giant South	8.5	0.23	0.08	0.15
3	Giant NW	8.2	0.44	0.04	0.40
4	Giant Central	8.3	0.41	0.20	0.21
5	Giant Central-D	8.3	0.41	0.20	0.21
6	Giant North	8.2	0.32	0.19	0.13
7	Ptarmigan	8.2	0.21	<0.01	0.21
8	Anvil-Faro	2.9	22.50	0.97	21.53
9	USGS-CLTPC	8.2	3.17	0.01	3.16
10	USGS-CLTPF	7.8	4.27	0.29	3.98
11	CLHN-TP-2	7.4	1.76	0.17	1.59
12	TP1-N	4.4	12.10	1.39	10.71
13	TP1-S	3.5	9.58	1.16	8.42
14	02JH99	8.0	0.83	0.09	0.74
15	05JH99	8.1	1.15	0.18	0.97
16	06JH99	7.9	0.57	0.19	0.38
17	08JH99	8.1	1.27	0.05	1.22
18	01TP1-2	2.3	8.31	2.97	5.34
19	TP3A	3.2	4.18	3.01	1.17
20	04PKHL-7-D	4.5	3.22	1.53	1.69

MRP-08511 C-305881 Giant Pond 0.4

Maximum Potential Acidity**	Neutralization Potential <sup>1</sup>	Net Neutralization Potential	Fizz	Custom Sulphate Sulphur	Neutralization Potential <sup>2</sup>
(Kg CaCO <sub>3</sub> /Tonne)	(Kg CaCO <sub>3</sub> /Tonne)	(Kg CaCO <sub>3</sub> /Tonne)		(Wt.%)	(Kg CaCO <sub>3</sub> /Tonne)
Calculation	7150	Calculation	7150	Custom Extraction	7120
19.7	9.0	-10.7	None	-	
4.7	216.7	212.0	Strong	-	
12.5	187.2	174.7	Strong	-	
6.6	253.5	246.9	Strong	-	241.0
6.6	239.0	232.4	Strong	-	239.7
4.1	193.5	189.4	Moderate	-	
6.6	4.6	-1.9	None	-	
672.8	-15.0	-687.9	None	0.87	
98.8	140.2	41.4	Strong	-	
124.4	61.7	-62.7	Strong	-	
49.7	122.5	72.8	Strong	-	
334.7	10.7	-324.0	None	-	
263.1	-19.4	-282.5	None	-	
23.1	475.5	452.4	Moderate	-	453.8
30.3	335.1	304.8	Moderate	-	371.8
11.9	114.8	102.9	Strong	-	
38.1	251.6	213.4	Moderate	-	300.0
166.9	-10.0	-176.9	None	8.08	
36.6	-5.1	-41.7	None	4.18	
52.8	-4.7	-57.5	Slight	2.21	

Sample ID	Lat	Long	Date collected	Location
IL-BG-1	42.35765	-90.39594	5/27/2010	south section of tailings pile farthest from road
IL-BG-2	42.35791	-90.39539	5/27/2010	flat top area on top of pile farthest from road
IL-BG-3	42.35947	-90.39590	5/27/2010	Large erosion gullies at northern end of pile farthest fr
IL-BG-3-gray	42.35947	-90.39590	5/27/2010	Large erosion gullies at northern end of pile farthest fr
IL-BG-4	42.35925	-90.39658	5/27/2010	Front face with desert pavement of pile farthest from r
IL-BG-5	42.35737	-90.39710	5/27/2010	East end of pile closest to road
IL-BG-sulfides	42.35690	-90.39636	5/27/2010	Southeast edge of pile closest to road near trees
IL-BG-6	42.35628	-90.39754	5/27/2010	Steep eroded faces on south section of pile closest to
IL-BG-6-white	42.35628	-90.39754	5/27/2010	Steep eroded faces on south section of pile closest to
IL-BG-7	42.35774	-90.39907	5/27/2010	Flat area near ponded water on pile closest to road

UTMCB-1

Uranium tailings from Utah

## ABA

### Notes:

Total sulphur by Leco furnace, done at Assayers Canada.

### Calculations:

\*Insoluble sulphur is based on difference between total sulphur and sulphate sulphur.

\*\*MPA (Maximum Potential Acidity) is based on sulphide sulphur.

\*\*\* NNP (Net Neutralization Potential) is based on difference between Neutralization Potential (NP) and MPA.

### References:

Reference for Std. Sobek NP method (Maxxam SOP No. 7110): Sobek NP Method (EPA 600 Method - describ

"Note that the major oxide sums in job MRP-11167 are often low. These look like some odd samples, with high LOI, and some high carbonate C. and S. Roasting C and S can lead to some unpredictable results in the LOI." email from David Fay sent to Seal on 12/03/2010.

Description	XRD file location
brown hardpan on top pile	10July13
fine tailings that does not have pebbly desert pavement	10July13
composite of gray clay-like layer and sandy brown layers	10July13
vial of gray clay-like layer	10July8
coarse desert pavement material	
Fresh tailings from eroded face ~15 feet below surface	10July13
sulfides from large rock	
coarse desert pavement	
white coating on coarse material on steep wall	10July8
fine tailings that does not have pebbly desert pavement	10July13
	10Aug18

(based in Sobek et al. 1978)

preliminary mineralogy	Analysis methods	plit for cher
gypsum, quartz, goethite?	XRD, chem, SPLP, thin section, ABA	<2 mm
quartz, dolomite, marcasite, pyrite, calcite	XRD, chem, SPLP, thin section, ABA	<2 mm
quartz, dolomite, pyrite, gypsum, orthoclase, chalcopyrite	XRD, chem, SPLP, thin section, ABA	<2 mm
quartz, dolomite, pyrite, feldspar, gypsum, pyrite, goethite	XRD	
quartz, dolomite, calcite, pyrite, gypsum, cerussite, marcasite	XRD, chem, sulfides?, thin section, Al not sieved	
dolomite, gypsum, epsomite, galena, pyrite	XRD	
quartz, dolomite, pyrite, calcite	XRD, chem, SPLP, thin section, ABA	<2 mm
quartz, calcite, gypsum, albite, almandite		

				Job No.	Lab No.	Field No.	C_CO2 C
							% CO2
spilt for AB/pilt for SPL	for thin-sec > 2 mm (g)	<2 mm (g)	paste pH				
<2 mm	<2 mm	unsieved		MRP-11167C-344034	IL-BG-1		0.81
<2 mm	<2 mm	unsieved		MRP-11167C-344035	IL-BG-2		36.4
<2 mm	<2 mm	unsieved		MRP-11167C-344036	IL-BG-3		27.3
				MRP-11167C-344037	IL-BG-4		41.7
<2 mm	<2 mm	unsieved		MRP-11167C-344038	IL-BG-5		39.5
				MRP-11167C-344039	IL-BG-6		41
<2 mm	<2 mm	unsieved		MRP-11167C-344040	IL-BG-7		38.7
<2 mm			185	700	8.355 MRP-11167C-344033	UTMCB-1	4.02

C_CO2_C	C_ICPAESC								
CRBNT_C	AI	Ca	Fe	K	Mg	Na	S	Ti	Ag
%	%	%	%	%	%	%	%	%	ppm
0.22	0.45	12.9	>15	0.41	0.27	<0.01	>5	0.02	1
9.93	0.22	>15	7.57	0.2	9.71	0.02	>5	0.01	<1
7.45	1.63	>15	5.17	1.5	7.15	0.02	>5	0.07	1
11.38	0.3	>15	2.15	0.26	11.2	0.03	1.32	0.01	<1
10.78	0.4	>15	2.6	0.37	10.2	0.02	3.49	0.02	<1
11.19	0.2	>15	1.84	0.17	11	0.03	1.69	<0.01	<1
10.56	0.35	>15	3.44	0.29	9.52	0.03	4.03	0.02	<1
1.1	3.29	4.18	1.23	1.59	0.75	0.63	1.17	0.16	<1

| <b>C_ICPAESC</b> |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| <b>As</b>        | <b>Ba</b>        | <b>Be</b>        | <b>Bi</b>        | <b>Cd</b>        | <b>Ce</b>        | <b>Co</b>        | <b>Cr</b>        | <b>Cs</b>        | <b>Cu</b>        |                  |
| ppm              |
102	40	0.1	0.06	6.2	5.59	24	4	<5	76	
66	44	<0.1	<0.04	12.1	5.32	8.2	3	<5	56.5	
41	62	0.6	0.07	22.3	15.7	14.3	11	<5	296	
14	17	<0.1	<0.04	9.3	4.97	3.3	3	<5	6.7	
27	19	0.2	<0.04	18	5.61	4.2	27	<5	7.1	
30	18	<0.1	<0.04	8.8	3.59	2.8	12	<5	6.6	
34	32	0.1	<0.04	15.8	5.72	5.3	7	<5	26	
36	1260	2.1	0.13	7.7	41.7	23.8	16	<5	213	

| <b>C_ICPAESC</b> |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| <b>Ga</b>        | <b>In</b>        | <b>La</b>        | <b>Li</b>        | <b>Mn</b>        | <b>Mo</b>        | <b>Nb</b>        | <b>Ni</b>        | <b>P</b>         | <b>Pb</b>        |                  |
| ppm              |
1.23	<0.02	2.7	2	723	0.91	0.9	52.8	960	624	
0.62	<0.02	2.6	1	1350	0.88	0.5	28.7	880	395	
3.9	<0.02	7.7	7	1290	0.61	2.7	31.9	1850	499	
0.77	<0.02	2.6	1	1520	0.64	0.6	7	560	481	
1.16	<0.02	3.1	2	1220	0.98	0.8	13.2	620	3660	
0.61	<0.02	2.1	2	1230	0.71	0.5	7.3	420	556	
0.98	<0.02	3	2	1190	0.48	0.7	15.2	650	835	
7.99	0.02	20	22	420	25.2	6	19.9	360	48.4	

| C_ICPAESC |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Rb        | Sb        | Sc        | Sn        | Sr        | Te        | Th        | Tl        | U         | V         |           |
| ppm       |
7.6	1.77	1	0.2	23.9	<0.1	1.3	1.6	1.1	6	
3.6	0.95	0.7	0.2	37	<0.1	0.8	1.7	0.9	3	
27.2	1.02	2	0.6	51.7	<0.1	3.6	0.8	2.4	11	
4.6	0.32	0.6	0.1	48.7	<0.1	0.7	0.2	1	3	
6.4	0.47	0.8	0.2	44.9	<0.1	1	0.2	1	4	
3.2	0.36	0.4	0.1	38.6	<0.1	0.6	0.2	0.8	2	
5.6	0.48	0.8	0.2	40	<0.1	1	0.6	0.9	4	
47.5	0.88	4.4	1.5	342	<0.1	5.8	1.2	141	673	

C_ICPAES	C_ICPAES	C_ICPAES	C_Org C	C_Tot C	C_Tot S	C_WDXRF	C_WDXRF	C_WDXRF	C_WDXRF
W	Y	Zn	Organic_C	C_C	S	Al2O3	CaO	Cr2O3	Fe2O3
ppm	ppm	ppm	%	%	%	%	%	%	%
<0.1	2.6	2490	0.27	0.49	10.8	1.07	19	<0.01	25
<0.1	3.9	2740	<0.01	9.5	7.04	0.75	25.4	0.02	12.2
0.2	7.3	6010	0.72	8.17	5.22	2.97	22.1	0.01	8.86
<0.1	3.6	3170	<0.01	11.3	0.51	0.92	29.5	0.01	3.3
<0.1	3.6	7130	<0.01	10.4	1.74	0.88	28.7	<0.01	4.03
<0.1	3.1	2610	0.01	11.2	1.01	0.73	27.7	0.02	3.04
<0.1	3.8	4290	<0.01	10.5	2.65	0.89	28.1	0.03	6.13
0.7	16.4	73	0.12	1.22	0.91	6.43	5.91	0.06	2.87

C_WDXRFC	sum XRF+	S. No.								
K2O	LOI	MgO	MnO	Na2O	P2O5	SiO2	TiO2			
%	%	%	%	%	%	%	%			
0.53	21.6	0.5	0.11	0.25	0.2	6.77	0.02	86.34	1	
0.2	24.8	14.4	0.18	0.29	0.15	5.95	<0.01	100.88	2	
1.61	25.1	11.2	0.18	0.38	0.37	14.2	0.09	100.46	3	
0.32	40.3	16.4	0.19	0.33	0.1	5.36	<0.01	108.54		
0.39	36.2	15.4	0.16	0.4	0.12	6.24	0.01	104.67	4	
0.17	38.5	17	0.15	0.3	0.08	8.75	<0.01	108.65		
0.35	34.1	15.5	0.16	0.35	0.14	7.71	<0.01	106.61	5	
1.89	6.51	1.26	0.08	1	0.07	70.3	0.32	98.83	6	

Sample ID	Paste	Total Sulphur	Sulphate Sulphur	Sulphide	um Pote	eutralizati	c Neutraliza	Fizz
	pH	(Wt.%)	(Wt.%)	(Wt.%)	CaCO3/To	CaCO3/To	CaCO3/To	Rating
ILBG-1	4.33 (4.58)	11.5 (11.7)	4.86 (4.93)	6.64	207.5	1.0 (0.25)	-206.5	None
ILBG-2	8.3	7.52	0.02	7.50	234.4	805.3	571.0	Strong
ILBG-3	8.0	5.36	0.71	4.65	145.3	579.3	434.0	Strong
ILBG-5	8.1	2.50	0.22	2.28	71.3	869.2	797.9	Strong
ILBG-7	8.3	3.70	0.01	3.69	115.3	844.8	729.5	Strong
UTMCB-1	8.6	0.89	0.64	0.25	7.8	92.6	84.8	Strong

Sample ID	Lat	Long	Date collected	Location	Description
01C-PR08	38.133333	-91.040277	2008	Pea Ridge mine tailings lake, Missouri (magnetite & REO)	tailings from various locations and depths collected by Wings Enterprises, mailed to Bob from Verplanck
Macraes-NZ	45.365833	170.42500	Apr-11	Macraes mine, NZ (gold)	tailings
Macraes-a-end	45.365833	170.42500	Apr-11	Macraes mine, NZ (gold)	crust from autoclave end (XRD only)
Macraes-a-mid	45.365833	170.42500	Apr-11	Macraes mine, NZ (gold)	crust from autoclave middle (XRD only)
Macraes-a-begin	45.365833	170.42500	Apr-11	Macraes mine, NZ (gold)	crust from autoclave beginning (XRD only)
Globe-NZ	42.180555	171.89750	4/4/2011	Globe mine, near Reefton, NZ	concentrate (XRD only) (probably arsenopyrite, stibnite, and pyrite)

*approximate lat & long*

Collected by

Wings Enterprises

Bob Seal

Bob Seal

Bob Seal

Bob Seal

Bob Seal

Sample ID	Date	Description
NZNewmontA	6/29/2007	SPLP leach with WSP1. Martha Mine, NZ
Giant South	6/29/2007	SPLP leach with WSP1. Giant South Pond.
Giant NW	6/29/2007	SPLP leach with WSP1. Giant NW Pond.
Gaint Central	6/29/2007	SPLP leach with WSP1. Giant Central Pond.
Gaint North	6/29/2007	SPLP leach with WSP1. Giant North Pond.
Ptarmigan	6/29/2007	SPLP leach with WSP1. Ptarmigan Pond.
Anvil-Faro	6/28/2007	SPLP leach with WSP1. Anvil Mine, Faro, YK.
USGS-CLTPC	6/28/2007	SPLP leach with WSP1. Callahan tailings.
USGS-CLTPF	6/28/2007	SPLP leach with WSP1. Callahan tailings.
CLHN-TP-2	6/28/2007	SPLP leach with WSP1. Callahan tailings.
TP1-N	6/28/2007	SPLP leach with WSP1. Elizabeth TP1 north.
TP1-S	6/28/2007	SPLP leach with WSP1. Elizabeth TP1 south.
02JH99	8/1/2007	SPLP leach with WSP2
05JH99	8/1/2007	SPLP leach with WSP2
06JH99	8/1/2007	SPLP leach with WSP2
08JH99	8/1/2007	SPLP leach with WSP2
WSP-1	6/28/2007	western synthetic precipitate from carboy 1
WSP-2	6/28/2007	western synthetic precipitate from carboy 2
Blk-WSP-2	07/27/07	western synthetic precipitate from carboy 2 leached in empty 1-L b
M-150	6/8/07	reference water
M-158	6/8/07	reference water
T-135	6/8/07	reference water
T-137	6/8/07	reference water
DI090507-AY RA		Ayuso DI
082307AR-1 RA		Acid-rinsed bottles batch 1
WSP3 RA		western synthetic precipitatation from carboy 3
WSP4 RA		western synthetic precipitatation from carboy 4

### VAG

07LW-1	11/6/2007	SPLP leach with WSP 3. VAG Lowell area.
07LW-2	11/8/2007	SPLP leach with WSP 3. VAG Lowell area.
07LW-3	11/8/2007	SPLP leach with WSP 3. VAG Lowell area.
07BMPO-1	11/6/2007	SPLP leach with WSP 3. VAG ore.
07CT-1	11/8/2007	SPLP leach with WSP 3. VAG C area.
07CT-2	11/6/2007	SPLP leach with WSP 3. VAG C area.
07CT-3	11/6/2007	SPLP leach with WSP 3. VAG C area.
07BMPO-2	11/9/2007	SPLP leach with WSP 3. VAG ore.
07ET-1	11/7/2007	SPLP leach with WSP 3. VAG Eden area.
07ET-2	11/7/2007	SPLP leach with WSP 3. VAG Eden area.
07ET-3	11/7/2007	SPLP leach with WSP 3. VAG Eden area.
07ET-4	11/7/2007	SPLP leach with WSP 3. VAG Eden area.
07EM-1	11/7/2007	SPLP leach with WSP 3. VAG Eden area.
07EM-2	11/7/2007	SPLP leach with WSP 3. VAG Eden area.
07CT-4	11/8/2007	SPLP leach with WSP 3. VAG C area.
07CT-5	11/8/2007	SPLP leach with WSP 3. VAG C area.
07CT-5 Dup	11/8/2007	SPLP leach with WSP 3. VAG C area.
07CT-6	11/6/2007	SPLP leach with WSP 3. VAG C area.
07CW-1	11/6/2007	SPLP leach with WSP 3. VAG C area.

M-150	reference water
T-137	reference water
WSP3	western synthetic precipitation from carboy 3

#### **Cofer**

07Cofer1A FA	1/16/2008 SPLP leach with WSP 4. Cofer tailings.
07Cofer1B FA	1/16/2008 SPLP leach with WSP 4. Cofer tailings.
07Cofer2 FA	1/16/2008 SPLP leach with WSP 4. Cofer tailings.
07Cofer2R FA	1/16/2008 SPLP leach with WSP 4. Cofer tailings.
07Cofer2-1 FA	1/16/2008 SPLP leach with WSP 4. Cofer tailings.
07Cofer3 FA	1/16/2008 SPLP leach with WSP 4. Cofer tailings.
M-150	reference water
M-158	reference water
T-137	reference water
T-135	reference water
122007AR-5 RA	12/20/2007 Acid-rinsed bottles batch 5
WSP4 RU	western synthetic precipitation from carboy 4

#### **Canadian Standards**

GTS-2	11/9/2007 SPLP leach with WSP 4. Gold tailings
GTS-2 Dup	11/9/2007 SPLP leach with WSP 4. Gold tailings
KZK-1	11/9/2007 SPLP leach with WSP 4. Acid base accounting material
NBM-1	11/9/2007 SPLP leach with WSP 4. Acid base accounting material
RTS-1	11/20/2007 SPLP leach with WSP 4. Sulphide tailings sample
RTS-2	11/20/2007 SPLP leach with WSP 4. Sulphide tailings sample
RTS-4	11/20/2007 SPLP leach with WSP 4. Sulphide tailings sample
TLS-1	11/14/2007 SPLP leach with WSP 4. Unoxidized tailings
UMT-1	11/14/2007 SPLP leach with WSP 4. Ultramafic ore tailings
UTS-1	11/14/2007 SPLP leach with WSP 4. Uranium tailings sample
UTS-2	11/14/2007 SPLP leach with WSP 4. Uranium tailings sample
UTS-3	11/14/2007 SPLP leach with WSP 4. Uranium tailings sample
UTS-4	11/14/2007 SPLP leach with WSP 4. Uranium tailings sample
M-158	reference water
M-150	reference water
T-137	reference water
LB112607	lab blank
WSP4 RU	western synthetic precipitation from carboy 4

#### **Finland**

Luikonlahti Magnesite #1	11/5/2008 SPLP leach with WSP 4. Luikonlahti magnesite tailings, Finland
Luikonlahti Magnesite #2	11/5/2008 SPLP leach with WSP 4. Luikonlahti magnesite tailings, Finland
Luikonlahti Pyritic #1	11/4/2008 SPLP leach with WSP 4. Luikonlahti pyritic tailings, Finland
Luikonlahti Pyritic #2	11/4/2008 SPLP leach with WSP 4. Luikonlahti pyritic tailings, Finland
Hammasahti oxidized #1	11/4/2008 SPLP leach with WSP 4. Hammasahti oxidized tailings, Finland
Hammasahti oxidized #2	11/4/2008 SPLP leach with WSP 4. Hammasahti oxidized tailings, Finland
Hammasahti unoxidized #1	11/4/2008 SPLP leach with WSP 4. Hammasahti unoxidized tailings, Finland
Hammasahti unoxidized #2	11/4/2008 SPLP leach with WSP 4. Hammasahti unoxidized tailings, Finland
Kotalahti #1	11/5/2008 SPLP leach with WSP 4. Kotalahti tailings, Finland
Kotalahti #2	11/5/2008 SPLP leach with WSP 4. Kotalahti tailings, Finland
Kotalahti #3	11/5/2008 SPLP leach with WSP 5. Kotalahti tailings, Finland
Kotalahti #4	11/5/2008 SPLP leach with WSP 5. Kotalahti tailings, Finland
WSP4	11/4/2008 western synthetic precipitation from carboy 4

WSP5	11/4/2008 western synthetic precipitation from carboy 5. Mix in Oct08. Split
WSP5	6/23/2009 western synthetic precipitation from carboy 5. Mix in Oct08- split
60-40 dilute RA	7/1/2009

M-150

M-158

T-135

T-137

Atik 1 FA	12/27/2009 SPLP leach with WSP 5.
Atik 1-Dup FA	12/27/2009 SPLP leach with WSP 5. Lab duplicate.
Atik 2 FA	12/27/2009 SPLP leach with WSP 5.
Atik 3 FA	12/27/2009 SPLP leach with WSP 5.
Atik 4 FA	12/27/2009 SPLP leach with WSP 5.
Stillwater FA	10/28/2009 SPLP leach with WSP 5.
MN BIF 1 FA	10/28/2009 SPLP leach with WSP 5.
MN BIF 2 FA	10/28/2009 SPLP leach with WSP 5.
MN BIF 3 FA	10/28/2009 SPLP leach with WSP 5.
WSP5 102609 RA	10/26/2009 WSP5 mixed with ESP2 to lower pH. pH was 5.8 on 10/26/09 and
102709 Blk FA	10/27/2009 SPLP leach with WSP 5. Fill 1-L and rotate with other samples.
102709 Blk RA	10/27/2009 SPLP leach with WSP 5. Fill 1-L and rotate with other samples.

M-150

M-158

T-135

T-137

M-150	<i>Spr 99</i>	<i>round robin</i>
M-158	<i>Spr 01</i>	<i>round robin</i>
T-135	<i>Spr 95</i>	<i>round robin</i>
T-137	<i>Fall 95</i>	<i>round robin</i>

#### Bautsch-Gray & Uranium

IL-BG-1	1/10/2011 SPLPw/WSP6, stopped at 10:46 am on 1/11/11, used a syring filter
IL-BG-2	1/10/2011 SPLP w/WSP6, stopped at 10:59 am on 1/11/11, used a syring filter
IL-BG-3	1/10/2011 SPLP w/WSP6, stopped at 11:12 am on 1/11/11, used a syringe fi
IL-BG-5	1/10/2011 SPLP w/WSP6, stopped at 11:36 on 1/11/11, used syringe filter, u
IL-BG-7	1/10/2011 SPLP w/WSP6, stopped at 11:49 am on 1/11/11, used syringe filte
UTMCB-1	1/10/2011 SPLP w/WSP6, stopped at 11:59 am on 1/11/11, used syringe filte
010611 DI-1 R	1/6/2011 Di from lab Epure 17.0 megohm - take split from hose connected t
010611 DI-1 SF	
010611 DI-1GF	
010611 DI-2 GF	
010611 DI-2 R	
010611 DI-2 SF	
010711 DI-A-1 R	1/7/2011 DI from Ayuso's lab from Milli Q. Greg filled 4-L HOPL container. <a href="#">S</a>
010711 DI-A-1GF	
010711 DI-A-1SF	
010711 DI-A-2GF	
010711 DI-A-2R	
010711 DI-A-2SF	

01071160/40-1R	1/7/2011 mix 100 mL 60/40 diluted w/400 mL lab DI (taken from hose connec
01071160/40-2R	
01071160/40-A1R	1/7/2011 DI from Ayuso lab mix 400 mL w/100 mL 60/40 diluted solution, us
01071160/40-A2R	
011311 BlkESP3F	1/13/2011 SPLP on empty 1-L w/ESP3
011311 BlkESP3R	
ESP3-1 R	1/12/2011 used for slag (steel) SPLP's, ESP3-1 RA & ESP3-1 RU, ESP3-2 R
ESP3-2 R	
WSP6-1 R	1/11/2011 fill carboy w/DI from hose connected to Mill. Q, adjust pH w/ 60/4
WSP6-2 R	
M-150	
M-158	
T-135	
T-137	

G: gelman; S: small cartridge filter;  
R: raw; F: filtered.

DO mg/L	water temp deg. C	pH	sp cond mS/cm	ORP raw mV	ORP correctec mV	alk bicarbonate mg/L
8	22.8	9.454	0.293 mS/cm			30.6
8	22.7	9.136	0.322 mS/cm			17.4
8	22.8	9.103	0.219 mS/cm			16.1
7	22.8	8.777	0.619 mS/cm			11.9
8	23	8.379	0.612 mS/cm			14
8	22.7	9.097	25.3 uS/cm			8
3	23.5	4.296	0.829 mS/cm			
8	23.4	7.785	73.1 uS/cm			24
8	23.3	8.029	0.822 mS/cm			15.8
8	23.3	7.861	0.529 mS/cm			21.5
3	23.4	5.805	2.30 mS/cm			23.6
2	23.4	5.291	1.571 mS/cm			1
8	22.8	9	305 µS/cm			37.2
8	22.8	8.498	570 µS/cm			28
9	22.8	8.062	573 µS/cm			30
8	22.9	8.268	232 µS/cm			36
	23.3	4.981	7.0 uS/cm			
		5.006				

ottle


			mS/cm		
8.13		8.81	0.035	152.7	352.7
8.79		9.76	0.113	139.3	339.3
8.71		9.34	0.054	160.4	360.4
8.22		9.93	0.272	133.8	333.8
8.68		9.77	0.097	144.4	344.4
8.14		9.97	0.173	120.8	320.8
8.50		9.97	0.197	117.9	317.9
8.55		9.86	0.621	116.5	316.5
8.73		10.13	0.227	100.5	300.5
8.73		10.03	0.209	119.8	319.8
8.66		10.06	0.215	112.3	312.3
8.65		9.88	0.257	125.5	325.5
8.28		8.90	0.056	145.3	345.3
8.46		9.48	0.088	134.6	334.6
8.79		10.17	0.249	129	329
8.85		10.16	0.217	136.6	336.6
8.72		10.16	0.218	137.8	337.8
8.45		9.98	0.222	128.3	328.3
8.32		9.35	0.065	141.3	341.3

uS/cm			
8	23	3.408	283
8	23	3.595	189.4
8	23	2.812	733
8	22.8	2.942	735
10	23	2.811	1050
8	23	3.162	610

mS/cm					
8.64	8.54	0.165	152.3	352.3	24
8.49	8.64	0.172	153.3	353.3	23.2
8.45	9.34	0.101	141.2	341.2	41.6
7.92	9.29	0.118	148.4	348.4	40
8.26	3.89	1.928	339.5	539.5	
7.86	2.48	3.590	411.3	611.3	
7.36	4.86	0.991	118.6	318.6	10
8.05	8.70	0.188	174.5	374.5	17.2
8.71	6.53	0.182	259.3	459.3	4.8
8.08	7.69	1.387	202.5	402.5	14.4
8.04	6.51	0.859	243.5	443.5	6
8.03	9.67	0.087	149.9	349.9	27.6
8.22	6.28	2.969	239.7	439.7	10

uS/cm					
6	9.06	35	113.7	313.7	3
6	9.14	38	56.4	256.4	2
10	8.78	57	-21.1	178.9	14
8	8.66	54	-11.5	188.5	15
6	2.81	650	422.7	622.7	
8	2.83	600	418.3	618.3	1.3
5	4.36	859	195.2	395.2	
4	4.68	167	125.6	325.6	
6	3.44	158	369.9	569.9	
8	3.71	107	321.2	521.2	
6	3.4	226	408	608	
8	4.01	96	335.5	535.5	

taken in Nov08

taken in June09

10	22.58	7.27	133	144.2	344.2	9.3
10	23.09	7.51	126	134.1	334.1	9.6
8	23.07	5.36	264	240.1	440.1	0
10	23	8.38	175	97.5	297.5	13
10	22.88	8.3	270	107	307	14.4
8	22.83	9.66	75	112.9	312.9	22.1
8	22.86	8.69	70	126.3	326.3	24
8	22.89	8.98	63	124.4	324.4	21.8
8	22.85	9.19	74	119.1	319.1	21.7
adjusted tc						
	22.13	5.08	6			
	22.8	5.08	3			
	22.8	5.08	3			

8	21.7	5.159	2.34 mS	193 mV	4.2
6	21.9	8.458	71.0 $\mu$ S	139 mV	19
8	21.8	7.539	2.26 mS	170 mV	21.1
8	21.7	8.545	0.877 mS	160.5 mV	14.4
8	21.8	9.437	85.1 $\mu$ S	120 mV	22.6
8	21.6	8.573	2.26 mS	157 mV	12.5
-	-	5.9 and flu	9.2 $\mu$ S		

- - 0.9  $\mu$ S -

-	-	1.63	23.8 mS	-
-	-	1.36	23.9 mS	-
-	-	4.171	10.9 $\mu$ S	-
-	-	4.171	9.3 $\mu$ S	-
-	-	4.94	2.3 $\mu$ S	-

alk carbonate mg/L	alk hydroxide mg/L	Job No.	Lab No.	Field No.	ICP LEACH Ag/P ug/L
		MRP-07992	C-296509	NZNewmontA FA	<5
		MRP-07992	C-296511	Giant S FA	<5
		MRP-07992	C-296507	Giant NW FA	<5
		MRP-07992	C-296519	Gaint Central FA	<5
		MRP-07992	C-296518	Gaint N FA	<5
		MRP-07992	C-296498	Ptarmigan FA	<5
		MRP-07992	C-296522	Anvil-Faro FA	<5
		MRP-07992	C-296500	USGS-CLTPC FA	<5
		MRP-07992	C-296521	USGS-CLTPF FA	<5
		MRP-07992	C-296515	CLHN-TP-2 FA	<5
		MRP-07992	C-296526	TP1-N FA	<5
		MRP-07992	C-296523	TP1-S FA	<5
		MRP-07992	C-296510	02JH99 FA	<5
		MRP-07992	C-296516	05JH99 FA	<5
		MRP-07992	C-296517	06JH99 FA	<5
		MRP-07992	C-296508	08JH99 FA	<5
		MRP-07992	C-296493	WSP-1 FA	<5
		MRP-07992	C-296492	WSP-2 RA	<5
		MRP-07992	C-296491	Blk-WSP-2 FA	<5
		MRP-07992	C-296504	M-150	<5
		MRP-07992	C-296514	M-158	<5
		MRP-07992	C-296527	T-135	5.6
		MRP-07992	C-296525	T-137	<5
		MRP-08433	C-304581	DI090507-AY RA	<5
		MRP-08433	C-304582	082307AR-1 RA	<5
		MRP-08433	C-304583	WSP3 RA	<5
		MRP-08433	C-304584	WSP4 RA	<5
27.6		MRP-08520	C-305992	07LW-1 FA	<5
12.8		MRP-08520	C-306001	07LW-2 FA	<5
93.8		MRP-08520	C-305993	07LW-3 FA	<5
32.8	5.6	MRP-08520	C-306017	07BMPO-1 FA	<5
31.4		MRP-08520	C-305998	07CT-1 FA	<5
44.6		MRP-08520	C-306005	07CT-2 FA	<5
90.4		MRP-08520	C-306008	07CT-3 FA	<5
24.0		MRP-08520	C-306018	07BMPO-2 FA	<5
10.0		MRP-08520	C-306014	07ET-1 FA	<5
68.0		MRP-08520	C-306009	07ET-2 FA	<5
9.6		MRP-08520	C-306010	07ET-3 FA	<5
53.6		MRP-08520	C-306016	07ET-4 FA	<5
32.0		MRP-08520	C-305994	07EM-1 FA	<5
60.8		MRP-08520	C-305997	07EM-2 FA	<5
67.4		MRP-08520	C-306015	07CT-4 FA	<5
		MRP-08520	C-306011	07CT-5 FA	<5
		MRP-08520	C-306012	07CT-5 Dup FA	<5
		MRP-08520	C-306013	07CT-6 FA	<5
		MRP-08520	C-305995	07CW-1 FA	<5

MRP-08520	C-306000	M-150	<5
MRP-08520	C-306023	T-137	<5
MRP-08433	C-304583	WSP3 RA	<5

MRP-08585	C-307172	07Cofer1A FA	<5
MRP-08585	C-307171	07Cofer1B FA	<5
MRP-08585	C-307175	07Cofer2 FA	<5
MRP-08585	C-307176	07Cofer2R FA	<5
MRP-08585	C-307177	07Cofer2-1 FA	<5
MRP-08585	C-307174	07Cofer3 FA	<5
MRP-08585	C-307170	M-150	<5
MRP-08585	C-307173	M-158	<5
MRP-08585	C-307178	T-137	<5
MRP-08585	C-307179	T-135	9.29
MRP-08585	C-307169	122007AR-5 RA	<5

MRP-08520	C-306003	GTS-2 FA	<5
MRP-08520	C-306004	GTS-2 Dup FA	<5
MRP-08520	C-305999	KZK-1 FA	<5
MRP-08520	C-306002	NBM-1 FA	<5
MRP-08520	C-306022	RTS-1 FA	<5
MRP-08520	C-306025	RTS-2 FA	<5
MRP-08520	C-306020	RTS-4 FA	<5
MRP-08520	C-306007	TLS-1 FA	<5
MRP-08520	C-306006	UMT-1 FA	<5
MRP-08520	C-306021	UTS-1 FA	<5
MRP-08520	C-306019	UTS-2 FA	<5
MRP-08520	C-305996	UTS-3 FA	<5
MRP-08520	C-306024	UTS-4 FA	<5
MRP-08520	C-306000	M-150	<5
MRP-08520	C-306023	T-137	<5

8  
8  
0  
0  
0

MRP-10009	C-326866	LuikonMag1 FA	<5
MRP-10009	C-326867	LuikonMag2 FA	<5
MRP-10009	C-326869	LuikonPy1 FA	<5
MRP-10009	C-326868	LuikonPy2 FA	<5
MRP-10009	C-326878	HammasOx1 FA	<5
MRP-10009	C-326877	HammasOx2 FA	<5
MRP-10009	C-326879	HammasUnox1 FA	<5
MRP-10009	C-326874	HammasUnox2 FA	<5
MRP-10009	C-326873	Kotalahti1 FA	<5
MRP-10009	C-326871	Kotalahti2 FA	<5
MRP-10009	C-326875	Kotalahti3 FA	<5
MRP-10009	C-326870	Kotalahti4 FA	<5
MRP-10009	C-326855	WSP4- 110408 RA	<5

MRP-10009	C-326856	WSP5- 110408 RA	<5
MRP-10011	C-326930	WSP5 RA	nr
MRP-10011	C-326962	60-40 dilute RA	nr
MRP-10009	C-326872	M-150	<5
MRP-10009	C-326876	M-158	<5
MRP-10009	C-326881	T-135	<5
MRP-10009	C-326880	T-137	<5

MRP-10475	C-335056	Atik 1 FA	<5
MRP-10475	C-335055	Atik 1-Dup FA	<5
MRP-10475	C-335058	Atik 2 FA	<5
MRP-10475	C-335057	Atik 3 FA	<5
MRP-10475	C-335059	Atik 4 FA	<5
MRP-10475	C-335053	Stillwater FA	14.2
MRP-10475	C-335051	MN BIF 1 FA	<5
MRP-10475	C-335050	MN BIF 2 FA	<5
MRP-10475	C-335052	MN BIF 3 FA	<5
MRP-10475	C-335049	WSP5 102609 RA	<5
MRP-10475	C-335047	102709 Blk FA	<5
MRP-10475	C-335048	102709 Blk RA	5.12
MRP-10475	C-335054	M-150	<5
MRP-10475	C-335060	M-158	18.5
MRP-10475	C-335062	T-135	<5
MRP-10475	C-335061	T-137	<5

9.81±1.05

-	-	MRP-11574 C-350151 IL-BG-1 FA	<5
-	-	MRP-11574 C-350131 IL-BG-2 FA	<5
-	-	MRP-11574 C-350149 IL-BG-3 FA	<5
-	-	MRP-11574 C-350144 IL-BG-5 FA	<5
-	-	MRP-11574 C-350133 IL-BG-7 FA	<5
-	-	MRP-11574 C-350150 UTMCB-1 FA	<5
		MRP-11574 C-350122 010611 DI-1RA	<5
		MRP-11574 C-350123 010611 DI-1SFA	<5
		MRP-11574 C-350121 010611 DI-1GFA	<5
		MRP-11574 C-350124 010611 DI-2 GFA	<5
		MRP-11574 C-350125 010611 DI-2 RA	<5
		MRP-11574 C-350126 010611 DI-2 SFA	<5
		MRP-11574 C-350114 010711 DI-A-1 RA	<5
		MRP-11574 C-350113 010711 DI-A-1GFA	<5
		MRP-11574 C-350115 010711 DI-A-1SFA	<5
		MRP-11574 C-350116 010711 DI-A-2GFA	<5
		MRP-11574 C-350117 010711 DI-A-2 RA	<5
		MRP-11574 C-350118 010711 DI-A-2SFA	<5

MRP-11574 C-350154 01071160/40-1RA <5  
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MRP-11574 C-350156 01071160/40-A1RA<5  
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MRP-11574 C-350129 011311BlkESP3FA <5  
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MRP-11574 C-350128 ESP3-2 RA <5  
MRP-11574 C-350119 WSP6-1 RA <5  
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MRP-11574 C-350134 M-150 <5  
MRP-11574 C-350140 M-158 <5  
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26	<50		14	68 <10		40	
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2530	<50	<5	71.8	<10	1.75	<5
736	<50	<5	70.7	<10	0.867	<5
3390	<50	<5	15.8	<10	3.96	12.4
3540	<50	<5	18.2	<10	3.92	9.42
4520	<50	<5	36.6	<10	1.56	5.84
5890	<50	<5	30.4	<10	44.1	14.3
<20	<50	<5	16	<10	5.28	<5
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21.4	<50	14.7	68.7	<10	34.9	6.28
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26	<50	14	68	<10	40	6.9

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7020	<50	<5	34.6	<10	0.26	<5
5400	51	<5	24.6	<10	174	5.18
50.1	<50	<5	1.73	<10	0.22	416
215	<50	<5	1.26	<10	0.73	<5
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124	<50	<5	66.5	<10	1.17	<5
36.5	<50	<5	99.9	<10	1.6	<5
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<20	<50	17.3	60.1	<10	34.2	7.75

139	<50	<5	55	<10	15.2	<5
195	<50	<5	62	<10	15.5	<5
781	<50	7.45	42.1	<10	26.9	<5
390	<50	5.26	62.8	<10	22.3	<5
236	<50	13.6	47.9	<10	40.2	<5
641	<50	<5	3.04	<10	3.4	<5
34.3	<50	<5	<1	<10	7.34	<5
31.8	<50	7.17	<1	<10	7.2	<5
61.9	<50	<5	<1	<10	8.1	<5
29.5	<50	<5	<1	<10	<0.1	<5
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<20	<50	23.6	15.1	<10	35.7	<5
<20	<50	9.51	65.2	57.6	9.68	49.2
32	<50	15.7	61.5	<10	34.2	9.68

$10.5 \pm 6.8$	$10.0 \pm 1.1$	$23.4 \pm 3.45$			$6.82 \pm 0.41$	
$30.5 \pm 6.9$			$67.8 \pm 4.3$	$59.0 \pm 2.6$	$38.1 \pm 1.59$	
			$65.0 \pm 4.8$	$5.2 \pm 0.5$	$38.1 \pm 1.5$	$50.5 \pm 3.2$
						$6.80 \pm 0.52$

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38.4	<50	<5	12.3	<10	14.2	<5
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<20	<50	<5	<1	<10	7.24	<5
<20	<50	24.9	21.4	<10	42.7	<5
<20	<50	7.52	70	55.5	11.1	53.9
21.9	<50	14.1	65.4	<10	43.5	6.99

ICP LEACH Co/P ug/L	ICP LEACH Cr/P ug/L	ICP LEACH Cu/P ug/L	ICP LEACH Fe/P ug/L	ICP LEACH K/P mg/L	ICP LEACH Li/P ug/L	ICP LEACH Mg/P mg/L	ICP LEACH Mn/P ug/L
36	<10	<10	147	4.52	<5	0.42	<10
<10	<10	<10	<20	2.12	<5	17.2	<10
<10	<10	<10	52	1.17	<5	7.82	<10
<10	<10	<10	<20	2.13	<5	21.7	<10
<10	<10	<10	<20	2.57	<5	23.7	<10
<10	<10	<10	99	0.36	<5	0.17	<10
198	<10	98	56000	0.75	<5	27.2	14000
<10	<10	<10	<20	0.27	<5	0.11	<10
<10	<10	<10	<20	0.39	<5	0.4	107
<10	<10	12	<20	0.79	<5	1.57	548
390	<10	<10	83000	7.74	36	23.9	21000
1650	<10	<10	343600	1.41	48	2.19	166
<10	<10	<10	<20	0.95	<5	22.6	<10
<10	<10	<10	<20	0.77	<5	57.4	53
<10	<10	<10	<20	1.35	<5	3.74	57
<10	<10	<10	<20	0.6	<5	17.6	102
<10	<10	<10	<20	<0.1	<5	<0.1	<10
<10	<10	<10	<20	0.41	<5	<0.1	<10
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<10	<10	<10	<20	1.14	<5	1.48	<10
<10	<10	<10	<20	1.78	<5	12.8	<10
46	82	65	257	0.95	76	2.14	440
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<10	<10	<10	<20	2.4 <5	97 <10
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<10	<10	<10	<20	0.1 <5	29 <10
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<10	<10	<10	<20	<0.1 <5	28 <10
<10	<10	<10	<20	<0.1 <5	29 <10
<10	<10	<10	<20	<0.1 <5	32 <10
<10	<10	<10	<20	0.15 <5	5.4 <10

<10	<10	<10	<20		1.1 <5		1.4 <10	
<10		22 <10		62	1.2	8.6	11	
<10	<10	<10	<20	<0.1	<5	<0.1	<10	107

<10	<10	827	398	0.469	<5	3.67	232
<10	<10	653	23.5	0.246	<5	3.18	202
<10	<10	3790	18200	0.161	<5	4.31	71.1
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<10	<10	2230	2150	1.04	<5	6.98	403
<10	<10	<10	<20	1.05	<5	1.25	<10
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<10	16.5	<10	53.6	1.13	8.21	9.95	94.4
41.2	65.5	60	204	0.845	74.8	2.03	410
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<10	<10	<10	<20	10	<5	2.1	<10
<10	<10	<10	<20	10	<5	1.9	<10
15	<10	210	1440	1.4	<5	24	1390
2800	67	5870	769500	<0.1	23	34	1330
39	10	<10	159200	3.8	6.9	7.4	943
<10	<10	<10	<20	8.3	6	1.6	<10
66	<10	517	<20	0.3	<5	17	149
<10	<10	<10	<20	2.5	<5	1.4	<10
14	<10	<10	<20	6	14	1.7	181
<10	<10	<10	<20	0.46	<5	0.34	<10
16	<10	<10	<20	1.5	55	274	1470
<10	<10	<10	<20	1.1	<5	1.4	<10
<10	22	<10	62	1.2	8.6	11	107

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<10	<10	<10	<20	0.39	<5	3.11	<10
40.3	11.9	850	10200	0.241	5.93	6.63	72.3
24.6	11.9	793	8950	<0.1	<5	2.91	42.4
998	<10	33.8	20800	0.906	79	0.911	63.5
805	<10	<10	36600	0.478	7.47	0.762	29.7
<10	<10	67.8	51.9	1.02	<5	1.9	18.7
<10	<10	123	<20	4.51	5.65	4.04	20.3
<10	<10	271	60	6.4	8.77	9.18	39.3
17.4	<10	924	<20	10.2	7.91	2.31	32.7
<10	<10	<10	41.6	<0.1	<5	<0.1	<10

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<10	<10	<10	<20	1.03	<5	1.39	<10
<10	<10	<10	<20	1.58	<5	11.5	<10
45.8	83.7	56.5	237	0.768	76.9	2.07	450
<10	19.7	<10	63.9	0.903	8.25	9.18	91.8

<10	<10	<10	28.8	1.87	<5	0.34	18.5
<10	<10	<10	56.6	1.93	<5	0.353	18.5
133	<10	8440	210	3.98	10.6	4.45	618
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<10	<10	<10	130	0.337	<5	0.967	<10
<10	<10	<10	583	<0.1	<5	2.74	32.1
<10	<10	<10	280	0.173	<5	2.29	33.2
<10	<10	<10	556	0.166	6.18	2.11	24.4
<10	<10	<10	<20	<0.1	<5	<0.1	<10
<10	<10	<10	<20	<0.1	<5	<0.1	<10
<10	<10	<10	<20	<0.1	<5	<0.1	<10
<10	<10	<10	<20	<0.1	<5	<0.1	<10
38.3	76.1	54.4	211	0.638	70.6	1.93	381
<10	22	<10	70.8	0.954	9.19	9.66	88.1

40.0±2.6	79.0±5.5	62.0±4.2	228±11	0.96±0.09	73.7±5.2	2.00±0.09	423±20
	19.4±2.0	1.9±1.2	71±9	1.19±0.13	8.7±1.5	10.1±0.5	98±5

<10	<10	<10	<20	1.81	<5	30.4	2060
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11.3	<10	<10	<20	2.3	<5	20.2	214
<10	<10	<10	<20	0.939	<5	2.16	<10
<10	<10	<10	<20	0.315	<5	2.21	<10
21.7	<10	<10	<20	7.99	16.2	12.6	32.9
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<10	<10	15.3	<20	0.109	<5	<0.1	<10
<10	<10	16.4	<20	<0.1	<5	<0.1	<10
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<10	<10	<10	<20	<0.1	<5	<0.1	<10
<10	<10	<10	<20	1.17	<5	1.28	<10
<10	<10	<10	<20	2.03	<5	12.4	<10
41	86.8	76.7	264	1.03	79.4	1.91	420
<10	19.5	<10	67.6	1.29	9.37	9.36	98.4

ICP_LEACH Mo/P ug/L	ICP_LEACH Na/P mg/L	ICP_LEACH Ni/P ug/L	ICP_LEACH P/P mg/L	ICP_LEACH Pb/P ug/L	ICP_LEACH Sb/P ug/L	ICP_H2O Se ug/L	ICP_LEACH SiO2/P mg/L
<20	44.2	<10	<0.5	<50	<50	4.3	
<20	11.4	<10	<0.5	<50	387	0.57	
<20	9.15	<10	<0.5	<50	420	0.16	
<20	11.2	<10	<0.5	<50	163	0.29	
<20	7.72	<10	<0.5	<50	129	0.57	
<20	<0.1	<10	<0.5	<50	<50	<0.1	
<20	<0.1	216	<0.5	3880	<50	0.94	
28	<0.1	<10	<0.5	<50	<50	<0.1	
<20	0.12	<10	<0.5	<50	<50	<0.1	
<20	0.85	<10	<0.5	<50	<50	<0.1	
<20	0.71	158	<0.5	<50	<50	1	
<20	0.22	752	<0.5	<50	<50	6.6	
<20	0.13	<10	<0.5	<50	<50	<0.1	
<20	0.26	<10	<0.5	<50	<50	0.26	
<20	0.33	<10	<0.5	110	<50	1.2	
<20	<0.1	<10	<0.5	<50	<50	<0.1	
<20	<0.1	<10	<0.5	<50	<50	<0.1	
<20	<0.1	<10	<0.5	<50	<50	<0.1	
<20	<0.1	<10	<0.5	<50	<50	<0.1	
<20	17.4	<10	<0.5	<50	<50	8.3	
<20	75.1	<10	<0.5	<50	<50	13.5	
55	31.9	69	<0.5	127	92	2.2	
<20	21.8	14	<0.5	<50	<50	4.2	
<20	<0.1	<10	<0.5	<50	<50	<200	<0.1
<20	<0.1	<10	<0.5	<50	<50	<200	<0.1
<20	<0.1	<10	<0.5	<50	<50	<200	<0.1
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<20	<0.1	<10	<0.5	<50	<50	<200	<0.1
<20	0.1	<10	<0.5	<50	<50	<200	2.3
<20	<0.1	<10	<0.5	<50	<50	<200	0.67
<20	<0.1	<10	<0.5	<50	<50	<200	2.3
<20	0.44	<10	<0.5	<50	<50	<200	<0.1
<20	<0.1	<10	<0.5	<50	<50	<200	0.82
<20	<0.1	<10	<0.5	<50	<50	<200	0.3
<20	<0.1	<10	<0.5	<50	<50	<200	0.26
<20	3.1	<10	<0.5	<50	<50	<200	<0.1
<20	<0.1	<10	<0.5	<50	<50	<200	0.26
<20	<0.1	<10	<0.5	<50	<50	<200	0.24
<20	<0.1	<10	<0.5	<50	<50	<200	0.17
<20	<0.1	<10	<0.5	<50	<50	<200	<0.1
<20	0.18	<10	<0.5	<50	<50	<200	1.1
<20	0.1	<10	<0.5	<50	<50	<200	1.5
<20	<0.1	<10	<0.5	<50	<50	<200	0.11
<20	<0.1	<10	<0.5	<50	<50	<200	0.18
<20	<0.1	<10	<0.5	<50	<50	<200	0.22
<20	<0.1	<10	<0.5	<50	<50	<200	<0.1
<20	<0.1	<10	<0.5	<50	<50	<200	1.3

<20	16	<10	<0.5	<50	<50	< 200	11
<20	22		17	0.71	<50	<50	< 200
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1

<20	<0.1	<10	<0.5	7220	<50	< 200	2.33
<20	0.102	<10	<0.5	93.4	<50	< 200	2.14
<20	0.131	<10	<0.5	5120	<50	< 200	1.67
<20	0.13	<10	<0.5	5310	<50	< 200	1.84
<20	0.121	<10	<0.5	3420	<50	< 200	2.69
<20	0.118	<10	<0.5	4140	<50	< 200	2.34
<20	14.7	<10	<0.5	<50	<50	< 200	11
<20	68.5	<10	<0.5	<50	<50	< 200	15
<20	20.9	13.6	<0.5	<50	<50	< 200	7.01
44.9	30.5	63.4	<0.5	104	56.4	< 200	4.36
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1

<20	1.2	<10	<0.5	<50	<50	< 200	0.99
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<20	1.4	<10	<0.5	<50	<50	< 200	3.2
<20	5.5	<10	<0.5	<50	<50	< 200	4.5
<20	1.5	22	<0.5	<50	<50	< 200	4.2
<20	0.39	100600	<0.5	88	<50	< 200	0.55
<20	0.56	16000	<0.5	<50	<50	< 200	2.7
<20	2.1	<10	<0.5	<50	<50	< 200	2.2
<20	0.23	3840	0.6	<50	<50	< 200	6
<20	1.5	<10	<0.5	<50	<50	< 200	2.3
<20	0.68	<10	<0.5	73	<50	< 200	1.3
<20	12	<10	<0.5	<50	<50	< 200	2.7
58	9.7	41	<0.5	<50	<50	< 200	4.7
<20	16	<10	<0.5	<50	<50	< 200	11
<20	22	17	0.71	<50	<50	< 200	7.1

<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
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<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
<20	<0.1	<10	<0.5	<50	<50	< 200	0.204
<20	0.12	<10	0.507	554	<50	< 200	0.393
<20	0.105	<10	0.51	300	<50	< 200	0.692
<20	<0.1	513	<0.5	397	<50	< 200	63.3
<20	<0.1	490	<0.5	<50	<50	< 200	57.8
<20	0.138	20.2	<0.5	<50	<50	< 200	0.243
<20	0.205	66.3	<0.5	<50	<50	< 200	0.689
<20	0.273	150	<0.5	<50	<50	< 200	3.56
<20	0.409	678	0.594	<50	<50	< 200	56
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1

<20	<0.1	<10	<0.5	<50	<50	< 200	0.213
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
<20	15.4	<10	<0.5	<50	<50	< 200	<0.1
<20	67.6	<10	<0.5	<50	<50	< 200	0.767
36.1	30.7	73.7	<0.5	112	75.7	< 200	2.21
<20	19.1	13.8	<0.5	<50	<50	< 200	1.27

<20	3.96	<10	<0.5	<50	<50	< 200	<0.1
<20	4.03	<10	<0.5	<50	<50	< 200	<0.1
<20	0.889	558	4.59	<50	<50	< 200	58.8
<20	4.64	<10	<0.5	<50	<50	< 200	<0.1
<20	3.64	<10	<0.5	<50	<50	< 200	<0.1
<20	7.39	<10	<0.5	<50	<50	< 200	<0.1
<20	0.622	<10	<0.5	<50	<50	< 200	<0.1
<20	0.332	<10	<0.5	<50	<50	< 200	<0.1
<20	1.41	<10	<0.5	<50	<50	< 200	<0.1
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
<20	<0.1	<10	<0.5	<50	<50	< 200	0.133
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
<20	15.4	<10	<0.5	<50	<50	< 200	<0.1
<20	62.3	<10	<0.5	<50	<50	< 200	<0.1
39.2	25.9	73.1	<0.5	116	70.6	< 200	0.376
<20	18.6	17.8	<0.5	<50	<50	< 200	<0.1

63.0±5.1	30.8±1.2	65.6±5.0	0.190±0.013	103±7	76.3±8.7	4.28±0.31	12.6±0.8
8.9±1.8	22.0±1.1	15.0±2.5		6.3±1.0	15.5±2.7		15.0±0.67

<20	0.45	62.1	<0.5	<50	<50	< 200	0.899
<20	<0.1	<10	<0.5	<50	<50	< 200	0.225
<20	0.166	<10	<0.5	<50	<50	< 200	0.221
<20	0.124	<10	<0.5	123	<50	< 200	0.776
<20	0.129	<10	<0.5	<50	<50	< 200	0.849
494	151	<10	<0.5	<50	<50	< 200	7.71
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
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<20	0.157	<10	<0.5	<50	<50	< 200	<0.1
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<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
<20	<0.1	<10	<0.5	<50	<50	< 200	<0.1
<20	18.7	<10	<0.5	<50	<50	< 200	12.2
<20	86.3	<10	<0.5	<50	<50	< 200	15.3
62.6	36.4	65.1	<0.5	127	65.6	< 200	4.2
<20	24.7	15.7	<0.5	<50	<50	< 200	6.83

ICP_LEACH SO4/P mg/L	ICP_LEACH Sr/P ug/L	ICP_LEACH Ti/P ug/L	ICP_LEACH V/P ug/L	ICP_LEACH Zn/P ug/L	ICPMS_LEACH Ag/P ug/L	ICPMS_LEACH Al/P ug/L
93	29	<50	<10	<20	<1	57.4
118	58	<50	<10	<20	<1	73.2
60	41	<50	<10	<20	<1	93.1
297	135	<50	<10	<20	<1	52
305	204	<50	<10	<20	<1	40.3
3.3	1.9	<50	<10	<20	<1	65.4
451	22	<50	<10	67000	<1	312
8.8	8.7	<50	<10	47	<1	4.9
450	52	<50	<10	527	<1	<2
253	87	<50	<10	1470	<1	<2
1650	290	<50	<10	1270	<1	2.5
1070	69	<50	<10	9350	<1	17
122	42	<50	<10	<20	<1	9.9
289	36	<50	<10	95	<1	<2
288	123	<50	<10	144	<1	<2
82	11	<50	<10	235	<1	<2
< 1	<1	<50	<10	<20	<1	<2
< 1	<1	<50	<10	<20	<1	<2
< 1	<1	<50	<10	<20	<1	<2
5.7	49	<50	31	<20	<1	3.9
123	65	<50	11	<20	<1	<2
7.7	45	<50	55	50	8	13.2
53	216	<50	13	52	<1	34.1
< 1	<1	<50	<10	<20	<1	<2
< 1	<1	<50	<10	<20	<1	<2
< 1	<1	<50	<10	<20	<1	<2
< 1	<1	<50	<10	<20	<1	<2

2.8	2	<50	<10	<20	<1	2.7
4.1	1	<50	<10	<20	<1	<2
2.3	1.7	<50	<10	<20	<1	<2
7.7	1.9	<50	<10	<20	<1	<2
1.2	<1	<50	<10	<20	<1	<2
2	<1	<50	<10	<20	<1	<2
1.5	<1	<50	<10	<20	<1	<2
169	5.4	<50	<10	<20	<1	<2
4	1.1	<50	<10	<20	<1	<2
3.8	<1	<50	<10	<20	<1	<2
3.8	1.1	<50	<10	<20	<1	<2
1.6	1.2	<50	<10	<20	<1	<2
2.3	6.2	<50	<10	<20	<1	2.7
3.2	11	<50	<10	<20	<1	1.9
1.7	1.4	<50	<10	<20	<1	<2
1.4	<1	<50	<10	<20	<1	<2
1.3	<1	<50	<10	<20	<1	<2
2.6	<1	<50	<10	<20	<1	<2
2.3	1.8	<50	<10	<20	<1	<2

5.1	45	<50	27	<20	<1	3.9
52	239	<50	13	<20	<1	33.7
< 1	<1	<50	<10	<20	<1	<2

65.8	12.1	<50	<10	1520	<1	2450
41.2	2.17	<50	<10	1600	<1	700
166	43.9	82.5	<10	4650	<1	3190
170	36.5	101	<10	3470	<1	3180
220	63	207	<10	2260	<1	4260
230	46.9	<50	<10	6240	<1	5270
4.74	39.8	<50	17.4	<20	<1	4
109	55.3	<50	<10	<20	<1	<2
48.8	208	<50	11.7	45.2	<1	28.1
6.36	42.1	<50	50.4	41.3	10.1	9.7
< 1	<1	<50	<10	<20	<1	<2

55	28	<50	<10	<20	<1	28.8
55	28	<50	<10	<20	<1	28.5
9.7	27	<50	<10	<20	<1	399
18	98	<50	<10	<20	<1	179
1300	171	<50	<10	201	<1	1340
2220	30	111	70	639	<1	35700
540	123	<50	15	62	<1	2.9
67	47	<50	<10	<20	<1	106
78	19	<50	<10	<20	<1	2.8
818	3500	<50	<10	<20	<1	66.6
456	128	<50	<10	32	<1	19.6
7.7	27	<50	18	<20	<1	406
2510	424	<50	<10	<20	<1	<2
5.1	45	<50	27	<20	<1	3.9
52	239	<50	13	51	<1	33.7

2.11	1.95	<50	<10	<20	<1	20.9
3.61	2.06	<50	<10	<20	<1	26
12	3.1	<50	<10	<20	<1	2.4
11.3	2.97	<50	<10	<20	<1	3.4
158	2.82	<50	<10	397	<1	7320
131	3.23	<50	<10	576	<1	6550
530	120	<50	<10	7370	<1	4120
85.2	<1	<50	<10	5970	<1	57
29.1	6.44	<50	<10	<20	<1	220
30.1	3.73	<50	<10	<20	<1	18.2
65.1	9.82	<50	<10	<20	<1	109
32.3	10.8	<50	<10	<20	<1	45.8
< 1	<1	<50	<10	<20	<1	<2

< 1	<1	<50	<10	<20	<1	19.5
< 1	<1	<50	<10	<20	<1	<2
1610	<1	<50	<10	<20	<1	25.3
4.98	50	<50	<10	<20	<1	6.6
108	64.8	<50	<10	<20	<1	3
6.65	49.9	<50	56.7	36.4	8.9	7.5
46.1	220	<50	12.1	36.1	<1	23.8

40.6	55.4	<50	<10	<20	<1	158
41.9	58.8	<50	<10	<20	<1	226
109	139	<50	<10	1220	<1	844
58.7	110	<50	<10	<20	<1	422
110	147	<50	<10	<20	<1	268
5.32	10.3	<50	<10	<20	<1	697
2.41	13.3	<50	<10	<20	<1	48
2.53	23.2	<50	<10	<20	<1	23.3
5.93	23.3	<50	<10	<20	<1	59.6
< 1	<1	<50	<10	<20	<1	<2
< 1	<1	<50	<10	<20	<1	<2
< 1	<1	<50	<10	<20	<1	<2
5.48	45.4	<50	12.5	<20	<1	3.8
103	56	<50	<10	<20	<1	<2
5.91	41.8	<50	51.2	45.8	10	10.4
46	202	<50	13	57.2	<1	33.6

$5.50 \pm 0.54$	$51.0 \pm 2.5$	$31.0 \pm 1.9$				
$105 \pm 3.7$	$63.6 \pm 1.85$	$11.3 \pm 0.82$				
	$46.0 \pm 2.3$	$52.8 \pm 3.6$	$48.2 \pm 4.7$	$9.81 \pm 1.05$	$10.5 \pm 6.8$	
	$230 \pm 14$	$14.0 \pm 1.6$	$49.5 \pm 4.2$			$30.5 \pm 6.9$

1730	114	<50	<10	2950	<1	<2
12	2.94	<50	<10	35.8	<1	18
1650	271	<50	<10	3420	<1	<2
543	43	<50	<10	88.2	<1	12.9
14.3	6.63	<50	<10	20.5	<1	29.4
1540	6760	<50	602	35.4	<1	13.2
< 1	<1	<50	<10	<20	<1	<2
< 1	<1	<50	<10	<20	<1	<2
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< 1	<1	<50	<10	<20	<1	<2
< 1	<1	<50	<10	<20	<1	<2
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< 1	<1	<50	<10	<20	<1	<2
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< 1	<1	<50	<10	<20	<1	<2
< 1	<1	<50	<10	<20	<1	<2
< 1	<1	<50	<10	<20	<1	<2

2880	<1	<50	<10	<20	<1	8.3
3200	<1	<50	<10	<20	<1	7.8
2830	<1	<50	<10	<20	<1	<2
2760	<1	<50	<10	<20	<1	<2
1.11	<1	<50	<10	<20	<1	<2
1.09	<1	<50	<10	<20	<1	<2
1.2	<1	<50	<10	<20	<1	<2
1.23	<1	<50	<10	<20	<1	<2
< 1	<1	<50	<10	<20	<1	<2
< 1	<1	<50	<10	<20	<1	<2
6.32	56.4	<50	26.4	<20	<1	2.7
131	73.2	<50	<10	<20	<1	<2
7.51	52.8	<50	66.7	56.8	10.1	13.2
55.3	272	<50	14.7	53	<1	35.1

ICPMS_LEACH As/P ug/L	ICPMS_LEACH Ba/P ug/L	ICPMS_LEACH Be/P ug/L	ICPMS_LEACH Bi/P ug/L	ICPMS_LEACH Ca/P mg/L	ICPMS_LEACH Cd/P ug/L
9.9	5.74	<0.05	< 0.2	11	<0.02
944	0.54	<0.05	< 0.2	20.1	<0.02
866	0.28	<0.05	< 0.2	15.3	<0.02
850	0.92	<0.05	< 0.2	95.4	0.02
1070	1.08	<0.05	< 0.2	88.4	<0.02
6.5	0.61	<0.05	< 0.2	3.2	0.2
7.9	13.7	1.2	< 0.2	52.7	138
<1	1.35	<0.05	< 0.2	10.2	0.85
<1	5.87	<0.05	< 0.2	204	17.6
<1	17.1	<0.05	< 0.2	80.2	18.1
<1	12.5	<0.05	< 0.2	559	0.21
<1	2.61	<0.05	< 0.2	146	2.95
<1	17.6	<0.05	< 0.2	21.7	0.09
<1	19.2	<0.05	< 0.2	34.5	1.56
<1	49.4	<0.05	0.2	108	16.9
1	25	<0.05	< 0.2	15.2	2.41
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	0.84	<0.05	< 0.2	<0.2	<0.02
<1	0.91	<0.05	< 0.2	<0.2	<0.02
<1	17.3	<0.05	< 0.2	5.28	<0.02
<1	17	<0.05	< 0.2	31.2	<0.02
10.5	64.4	53.5	< 0.2	12.2	49.4
<1	63.3	4.7	< 0.2	42	6.67
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02

<1		0.63 <0.05	< 0.2	2.45 <0.02
<1		0.89 <0.05	< 0.2	2.53 <0.02
<1		0.68 <0.05	< 0.2	4.98 <0.02
<1		4.61 <0.05	< 0.2	1.2 <0.02
	2	0.78 <0.05	< 0.2	2.44 <0.02
<1		0.59 <0.05	< 0.2	1.56 <0.02
<1		1.33 <0.05	< 0.2	1.39 <0.02
	2	12.3 <0.05	< 0.2	2.3 <0.02
	2	0.85 <0.05	< 0.2	1.52 <0.02
	1	1 <0.05	< 0.2	1.56 <0.02
	2	1.19 <0.05	< 0.2	1.53 <0.02
<1		0.72 <0.05	< 0.2	1.19 <0.02
<1		0.89 <0.05	< 0.2	4.3 <0.02
	2	1.03 <0.05	< 0.2	3.23 <0.02
<1		1.38 <0.05	< 0.2	1 <0.02
<1		0.92 <0.05	< 0.2	1.37 <0.02
<1		0.94 <0.05	< 0.2	1.4 <0.02
<1		0.99 <0.05	< 0.2	1.44 <0.02
<1		0.64 <0.05	< 0.2	3.54 <0.02

<1		10	<0.05	< 0.2		6.2	<0.02	
<1		65.1		5.6 < 0.2		40		6.78
<1	<0.2		<0.05	< 0.2	<0.2		<0.02	

<1	61.2	0.4	< 0.2	1.75	4.37
<1	59.8	0.3	< 0.2	0.98	3.4
<1	13.4	0.08	< 0.2	3.9	12.3
<1	14.7	0.08	< 0.2	3.68	9.05
<1	31.3	0.1	< 0.2	1.56	5.26
<1	25.4	0.6	< 0.2	41.2	15
<1	10.9	<0.05	< 0.2	5.94	<0.02
<1	11.9	<0.05	< 0.2	35.5	<0.02
<1	60.3	5.2	< 0.2	34.9	6.98
9.3	61.7	58.1	< 0.2	9.96	51.2
<1	<0.2	<0.05	< 0.2	<0.2	<0.02

2	0.58	<0.05	< 0.2	22.5	<0.02
2	0.59	<0.05	< 0.2	22.7	<0.02
<1	14.6	<0.05	< 0.2	8.24	<0.02
<1	76.4	<0.05	< 0.2	7.88	<0.02
1	8.44	0.05	< 0.2	451	3.31
2	10.9	0.4	< 0.2	55.1	7.37
<1	168	<0.05	< 0.2	83.6	0.05
2	22.6	<0.05	< 0.2	22.6	<0.02
<1	38.2	<0.05	< 0.2	3.07	0.08
<1	44.5	<0.05	< 0.2	310	<0.02
<1	47.6	<0.05	< 0.2	174	0.29
1	4.73	<0.05	< 0.2	3.31	0.02
2	14.5	<0.05	< 0.2	555	0.62
<1	10	<0.05	< 0.2	6.2	<0.02
<1	65.1	5.6	< 0.2	40	6.78

379	0.45	0.1	< 0.2	2.62	<0.02
369	0.25	0.06	< 0.2	2.89	<0.02
2	<0.2	0.07	< 0.2	4.28	<0.02
3	<0.2	<0.05	< 0.2	4.02	<0.02
5.7	23.9	0.1	< 0.2	0.25	0.3
7.3	29.6	0.2	< 0.2	0.24	0.31
3	21.4	0.6	< 0.2	163	3.5
<1	1.75	0.09	< 0.2	0.23	382
<1	1.26	0.1	< 0.2	0.69	<0.02
<1	40	0.1	< 0.2	0.57	<0.02
<1	60.5	0.2	< 0.2	1.09	0.08
<1	89.8	0.2	< 0.2	1.54	0.04
<1	<0.2	<0.05	< 0.2	<0.2	<0.02

<1	0.4	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	0.1	< 0.2	<0.2	<0.02
<1	0.74	<0.05	< 0.2	<0.2	<0.02
<1	21.8	<0.05	< 0.2	6.86	0.05
<1	21.8	<0.05	< 0.2	38.8	<0.02
10.3	62.9	60.5	< 0.2	9.87	50.9
<1	61.4	5.3	< 0.2	36.4	6.69

<1	50.5	<0.05	< 0.2	16	<0.02
<1	54.2	<0.05	< 0.2	15.7	<0.02
<1	38.4	0.2	< 0.2	28	3.53
<1	54.2	0.07	< 0.2	22.3	<0.02
1	43.4	<0.05	< 0.2	41.3	<0.02
<1	3.61	<0.05	< 0.2	3.53	<0.02
5.9	0.34	0.07	< 0.2	7.76	<0.02
26	<0.2	<0.05	< 0.2	7.51	<0.02
10.8	0.56	0.07	< 0.2	8.52	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	0.06	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	11.2	<0.05	< 0.2	6.73	<0.02
<1	11.6	<0.05	< 0.2	39.2	<0.02
10.6	61.2	64.7	< 0.2	10.9	52.9
<1	59.5	6	< 0.2	39.2	7.18

$10.0 \pm 1.1$	$67.8 \pm 4.3$	$59.0 \pm 2.6$	$6.82 \pm 0.41$
	$65.0 \pm 4.8$	$5.2 \pm 0.5$	$38.1 \pm 1.59$

<1	1.5	<0.05	< 0.2	580	38.1
<1	13.2	<0.05	< 0.2	9.9	0.48
<1	10.9	<0.05	< 0.2	613	17.5
<1	13.5	<0.05	< 0.2	165	0.53
<1	12.6	<0.05	< 0.2	11.3	0.13
62.8	118	<0.05	< 0.2	483	2.2
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02

<1	0.51	<0.05	< 0.2	<0.2	<0.02
<1	0.53	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	<0.2	<0.05	< 0.2	<0.2	<0.02
<1	7.8	<0.05	< 0.2	5.8	<0.02
<1	8.6	<0.05	< 0.2	34.3	<0.02
11.2	67.8	72.7	< 0.2	11.4	54
<1	64.8	6.4	< 0.2	37.4	7

ICPMS_LEACH Ce/P ug/L	ICPMS_LEACH Co/P ug/L	ICPMS_LEACH Cr/P ug/L	ICPMS_LEACH Cs/P ug/L	ICPMS_LEACH Cu/P ug/L	ICPMS_LEACH Dy/P ug/L
< 0.01	22.6	<1	0.19	2.5	< 0.005
< 0.01	4.15	<1	< 0.02	0.81	< 0.005
< 0.01	2.46	<1	< 0.02	0.82	< 0.005
< 0.01	5.09	<1	< 0.02	1.5	< 0.005
< 0.01	0.9	<1	< 0.02	1.7	< 0.005
0.15	0.09	<1	0.05	0.7	0.005
11.4	160	<1	0.25	106	2.02
< 0.01	<0.02	<1	0.15	2.5	< 0.005
< 0.01	0.18	<1	1.17	7.1	< 0.005
< 0.01	0.68	<1	0.26	12.1	< 0.005
8.89	329	<1	1.02	3.6	0.65
0.83	1160	<1	2.35	1.9	0.066
< 0.01	<0.02	<1	< 0.02	2.6	< 0.005
< 0.01	0.14	<1	< 0.02	1	< 0.005
< 0.01	0.1	<1	1.52	2	< 0.005
< 0.01	0.17	<1	< 0.02	0.58	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	3.4	< 0.005
< 0.01	<0.02	<1	< 0.02	3.4	< 0.005
0.02	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	3	< 0.02	<0.5	< 0.005
0.03	42.2	81.5	< 0.02	68	< 0.005
0.04	0.16	19.6	0.02	2.2	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005

< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01		0.04	1.1 < 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01		0.08	1.4 < 0.02		0.92 < 0.005
< 0.01		0.02 <1	< 0.02	<0.5	< 0.005
< 0.01		0.03	1 < 0.02	<0.5	< 0.005
< 0.01		0.02 <1	< 0.02		0.55 < 0.005
< 0.01		0.16	2.8 < 0.02		0.73 < 0.005
< 0.01		0.03	2.2 < 0.02		0.5 < 0.005
< 0.01		0.03	2 < 0.02		0.51 < 0.005
< 0.01		0.04	2.2 < 0.02		0.56 < 0.005
< 0.01		0.05	4.4 < 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02		1.3 < 0.02		0.57 < 0.005
< 0.01		0.03	1.1 < 0.02	<0.5	< 0.005
< 0.01		0.02	1.6 < 0.02		0.5 < 0.005
< 0.01		0.02	1.7 < 0.02	<0.5	< 0.005
< 0.01		0.03	1.6 < 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005

	0.02	<0.02	<1	< 0.02	<0.5	< 0.005	
	0.04	0.16	<1	< 0.02	0.02	<0.5	2
< 0.01	<0.02		<1	< 0.02		< 0.005	0.005

8.54	3.57	<1	0.15	800	0.5		
2.05	2.32	<1	0.1	655	0.08		
3.67	1.27	<1	0.1	3600	0.12		
4.31	1.95	<1	0.12	3440	0.15		
3.25	0.87	<1	0.11	4980	0.099		
12.8	4.38	<1	0.12	2080	0.8		
0.01	<0.02	1	< 0.02	<0.5	< 0.005		
< 0.01	<0.02	3	< 0.02	<0.5	< 0.005		
0.04	0.14	17.8	0.03	2.4	0.009		
0.03	36.7	73.3	< 0.02	60.9	0.005		
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005		

< 0.01	0.98	<1	< 0.02	4.5	< 0.005		
< 0.01	1.03	<1	< 0.02	4.5	< 0.005		
< 0.01	<0.02	<1	0.22	<0.5	< 0.005		
0.01	<0.02	<1	0.46	2.8	< 0.005		
14.1	11.8	<1	0.06	193	1.37		
51.2	2580	76.9	2.35	5420	2.67		
0.27	33.7	<1	0.12	1.6	0.03		
< 0.01	0.02	<1	0.03	1.4	< 0.005		
0.03	56.9	<1	0.05	505	< 0.005		
0.04	<0.02	<1	0.3	2.7	< 0.005		
316	12.6	<1	0.28	4	17		
< 0.01	<0.02	<1	< 0.02	0.52	< 0.005		
17.9	12.3	<1	0.1	8.8	1.98		
0.02	<0.02	<1	< 0.02	<0.5	< 0.005		
0.04	0.16	19.6	0.02	2	0.005		

< 0.01	0.04	<1	0.11	<0.5	< 0.005		
< 0.01	0.05	<1	0.11	<0.5	< 0.005		
< 0.01	0.07	<1	0.1	<0.5	< 0.005		
< 0.01	0.08	<1	0.11	<0.5	< 0.005		
12.7	33.8	11.4	0.56	859	0.46		
11.1	21.9	12.3	0.96	853	0.82		
29.1	884	<1	0.05	57.2	0.97		
0.14	824	<1	0.04	0.64	0.02		
0.23	1.35	3.8	2.22	78.4	0.02		
0.01	3.27	<1	1.07	140	< 0.005		
0.08	8.5	<1	1.9	295	0.02		
0.04	16.7	<1	1.4	999	< 0.005		
< 0.01	<0.02	<1	< 0.02	0.59	< 0.005		

0.02	0.06	<1	< 0.02	0.95	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
0.01	0.02	<1	< 0.02	8.4	< 0.005
0.02	0.05	1.7	0.02	0.71	0.01
< 0.01	<0.02	4.8	< 0.02	<0.5	< 0.005
0.03	38.1	74.6	< 0.02	59.8	0.007
0.04	0.17	18.3	0.02	1.8	< 0.005

0.16	0.43	<1	0.04	0.8	0.008
0.3	0.25	<1	0.05	1.3	0.01
6.57	136	<1	0.22	8400	0.41
0.39	0.56	<1	0.04	5.2	0.01
0.09	0.15	<1	0.04	2.3	< 0.005
3.85	0.51	1.7	< 0.02	6.8	< 0.005
0.02	0.61	<1	0.02	<0.5	< 0.005
0.01	0.61	<1	< 0.02	<0.5	< 0.005
0.03	0.46	<1	0.06	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	0.14	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
0.01	<0.02	2.5	< 0.02	<0.5	< 0.005
< 0.01	<0.02	8.1	< 0.02	<0.5	< 0.005
0.03	42.7	83.7	< 0.02	67.2	< 0.005
0.04	0.14	20.6	0.02	1.9	0.008

<b>40.0±2.6</b>	<b>79.0±5.5</b>	<b>62.0±4.2</b>
	<b>19.4±2.0</b>	<b>1.9±1.2</b>

0.61	3.1	<1	< 0.02	3.4	0.04
0.01	0.04	<1	< 0.02	5.5	< 0.005
< 0.01	14.9	<1	0.02	9.4	< 0.005
< 0.01	0.15	<1	< 0.02	1.2	< 0.005
< 0.01	<0.02	<1	< 0.02	2.2	< 0.005
< 0.01	23.2	<1	0.27	6.3	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	0.21	<1	< 0.02	0.66	< 0.005
< 0.01	0.06	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	0.61	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	0.03	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	0.03	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005

< 0.01	<0.02	<1	< 0.02	15.7	< 0.005
< 0.01	<0.02	<1	< 0.02	15.6	< 0.005
< 0.01	<0.02	<1	< 0.02	3.1	0.005
< 0.01	<0.02	<1	< 0.02	3.3	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
< 0.01	<0.02	<1	< 0.02	<0.5	< 0.005
0.02	<0.02	2.7	< 0.02	<0.5	< 0.005
< 0.01	<0.02	9.4	< 0.02	<0.5	< 0.005
0.03	38.8	71.8	< 0.02	69.1	< 0.005
0.04	0.13	16.8	0.02	2	0.005



< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05
0.008	0.008	<50	< 0.05	0.01	< 0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05

0.18	0.19	317	0.07	1	< 0.05
0.04	0.04	<50	< 0.05	0.14	< 0.05
0.064	0.06	16300	0.3	0.18	< 0.05
0.072	0.063	18100	0.24	0.24	< 0.05
0.05	0.04	18300	1	0.15	< 0.05
0.35	0.28	1830	0.1	1.3	< 0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05
0.009	0.005	<50	< 0.05	0.008	< 0.05
< 0.005	0.007	164	< 0.05	0.007	< 0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05

< 0.005	< 0.005	<50	0.08	< 0.005	< 0.05
< 0.005	< 0.005	<50	0.09	< 0.005	< 0.05
< 0.005	< 0.005	<50	0.46	< 0.005	< 0.05
< 0.005	0.01	<50	0.64	< 0.005	< 0.05
0.59	0.44	1300	0.1	1.82	0.1
1.44	1.02	750000	1.6	3.89	0.9
0.01	0.02	146000	< 0.05	0.03	0.2
< 0.005	< 0.005	<50	0.2	< 0.005	< 0.05
< 0.005	0.005	<50	< 0.05	0.006	< 0.05
< 0.005	0.007	<50	0.2	< 0.005	< 0.05
6.38	1.79	<50	1.9	29.3	0.35
< 0.005	< 0.005	<50	0.2	< 0.005	< 0.05
0.47	0.31	<50	0.1	2.06	0.1
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05
0.008	0.008	<50	< 0.05	0.01	< 0.05

< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05
0.22	0.15	9860	0.2	0.73	0.1
0.39	0.24	9540	0.1	1.01	0.06
0.33	0.35	19200	0.2	1.66	0.06
0.008	< 0.005	36900	< 0.05	0.02	< 0.05
0.008	0.01	<50	< 0.05	0.02	< 0.05
< 0.005	0.006	<50	< 0.05	< 0.005	< 0.05
0.006	< 0.005	<50	< 0.05	0.01	< 0.05
0.007	0.006	<50	< 0.05	< 0.005	< 0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05

< 0.005	< 0.005	50	< 0.05	< 0.005	< 0.05
< 0.005	< 0.005	<50	< 0.05	0.006	< 0.05
< 0.005	< 0.005	<50	< 0.05	0.006	0.06
0.006	0.006	<50	< 0.05	< 0.005	< 0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05
< 0.005	0.006	180	< 0.05	< 0.005	< 0.05
0.01	< 0.005	<50	< 0.05	0.01	< 0.05

< 0.005	0.01	<50	0.28	0.01	0.1
0.005	0.01	<50	0.27	0.01	0.1
0.16	0.12	119	0.06	0.51	0.06
0.006	0.01	<50	0.65	0.02	0.2
< 0.005	0.009	<50	0.42	0.006	0.1
< 0.005	< 0.005	<50	0.09	< 0.005	< 0.05
< 0.005	< 0.005	493	0.06	< 0.005	< 0.05
< 0.005	< 0.005	128	0.09	< 0.005	< 0.05
< 0.005	< 0.005	453	0.1	< 0.005	< 0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005	< 0.05
< 0.005	< 0.005	135	< 0.05	0.005	< 0.05
0.01	< 0.005	<50	< 0.05	0.02	< 0.05

$228 \pm 11$   
 $71 \pm 9$

0.03	0.008	<50	0.07	0.05
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	0.07	< 0.005
< 0.005	< 0.005	<50	0.06	< 0.005
< 0.005	0.007	<50	< 0.05	0.01
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005

< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	0.006
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
< 0.005	< 0.005	<50	< 0.05	< 0.005
0.006	< 0.005	274	< 0.05	0.009
0.008	0.006	<50	< 0.05	0.01

ICPMS_LEACH Ho/P ug/L	ICPMS_LEACH K/P mg/L	ICPMS_LEACH La/P ug/L	ICPMS_LEACH Li/P ug/L	ICPMS_LEACH Lu/P ug/L	ICPMS_LEACH Mg/P mg/L
< 0.005	3.42	< 0.01	2.9	< 0.1	0.31
< 0.005	1.64	0.02	0.8	< 0.1	14.6
< 0.005	0.86	0.02	1.7	< 0.1	6.03
< 0.005	2.33	0.01	1.1	< 0.1	23
< 0.005	2.52	< 0.01	2.2	< 0.1	22.9
< 0.005	0.3	0.07	< 0.1	< 0.1	0.15
0.39	0.73	6.02	2.8	0.1	26.3
< 0.005	0.2	< 0.01	< 0.1	< 0.1	0.1
< 0.005	0.46	< 0.01	< 0.1	< 0.1	0.41
< 0.005	0.59	< 0.01	0.2	< 0.1	1.18
0.14	7.93	7.86	30.8	< 0.1	23.3
0.01	1.07	0.62	41.8	< 0.1	1.67
< 0.005	0.7	< 0.01	< 0.1	< 0.1	18.5
< 0.005	0.66	< 0.01	0.5	< 0.1	50.9
< 0.005	1.17	< 0.01	0.8	< 0.1	3.26
< 0.005	0.4	< 0.01	0.1	< 0.1	13.7
< 0.005	0.04	< 0.01	< 0.1	< 0.1	<0.01
< 0.005	0.38	< 0.01	< 0.1	< 0.1	<0.01
< 0.005	0.37	< 0.01	< 0.1	< 0.1	<0.01
< 0.005	0.85	0.01	0.7	< 0.1	1.15
< 0.005	1.36	< 0.01	0.8	< 0.1	9.8
< 0.005	1.14	0.03	67.9	< 0.1	2.31
< 0.005	1.33	0.04	7.5	< 0.1	11.5
< 0.005	<0.03	< 0.01	< 0.1	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	< 0.1	<0.01

< 0.005		0.04 < 0.01	2.5 < 0.1	2.15
< 0.005		0.08 < 0.01	0.3 < 0.1	11.4
< 0.005	<0.03	< 0.01	2.7 < 0.1	2.76
< 0.005		0.65 < 0.01	2.1 < 0.1	48.2
< 0.005		0.05 < 0.01	0.3 < 0.1	9.79
< 0.005		0.06 < 0.01	0.8 < 0.1	22.5
< 0.005		0.08 < 0.01	0.6 < 0.1	26.7
< 0.005		2.32 < 0.01	0.6 < 0.1	94.7
< 0.005		0.08 < 0.01	1.5 < 0.1	34.1
< 0.005		0.07 < 0.01	0.5 < 0.1	28.2
< 0.005		0.07 < 0.01	0.8 < 0.1	30.4
< 0.005		0.06 < 0.01	1.4 < 0.1	45.5
< 0.005		0.1 < 0.01	2.7 < 0.1	3.42
< 0.005		0.07 < 0.01	2.5 < 0.1	9.34
< 0.005		0.07 < 0.01	1.2 < 0.1	41.3
< 0.005		0.06 < 0.01	0.9 < 0.1	31.9
< 0.005		0.06 < 0.01	1 < 0.1	32.9
< 0.005		0.08 < 0.01	1 < 0.1	35.8
< 0.005		0.05 < 0.01	2.8 < 0.1	5.56

< 0.005		1.06	0.01	1.5 < 0.1	1.27
< 0.005		1.25	0.04	10.9 < 0.1	11.3
< 0.005	<0.03	< 0.01	< 0.1	< 0.1	<0.01

0.07	0.57	3.35	1.4	< 0.1	3.32
0.01	0.34	0.69	1.8	< 0.1	2.85
0.02	0.2	2.3	0.2	< 0.1	3.76
0.02	0.1	2.76	< 0.1	< 0.1	2.88
0.02	0.05	2.37	< 0.1	< 0.1	4.67
0.12	1.07	4.24	3.1	< 0.1	5.97
< 0.005	1.04	< 0.01	1.4	< 0.1	1.27
< 0.005	1.64	< 0.01	1	< 0.1	11.2
< 0.005	1.1	0.04	8	< 0.1	9.47
< 0.005	0.9	0.02	70	< 0.1	1.89
< 0.005	<0.03	< 0.01	0.2	< 0.1	<0.01

< 0.005	1.72	< 0.01	1.1	< 0.1	2.99
< 0.005	1.74	< 0.01	1.2	< 0.1	3.07
< 0.005	9.67	< 0.01	3.8	< 0.1	1.85
< 0.005	9.69	< 0.01	1.9	< 0.1	1.69
0.23	1.12	7.41	1.2	< 0.1	19.2
0.5	<0.03	20.3	21.1	0.2	25.6
0.006	3.24	0.29	6.8	< 0.1	5.92
< 0.005	7.54	< 0.01	6.1	< 0.1	1.37
< 0.005	0.2	0.02	0.5	< 0.1	14.3
< 0.005	2.12	0.2	3.5	< 0.1	1.09
2.75	5.36	196	13.3	0.4	1.46
< 0.005	0.3	< 0.01	3.7	< 0.1	0.34
0.27	1.29	14.7	45.3	< 0.1	218
< 0.005	1.06	0.01	1.5	< 0.1	1.27
< 0.005	1.25	0.04	10.9	< 0.1	11.3

< 0.005	0.79	< 0.01	0.7	< 0.1	1.79
< 0.005	0.63	< 0.01	0.9	< 0.1	2.21
< 0.005	0.56	< 0.01	1.1	< 0.1	3.4
< 0.005	0.49	< 0.01	1.1	< 0.1	3.21
0.09	0.3	7.15	3.7	< 0.1	5.96
0.14	0.1	5.34	2.8	< 0.1	2.59
0.15	0.92	13.5	64.2	< 0.1	0.66
< 0.005	0.59	0.06	5.6	< 0.1	0.75
< 0.005	1.06	0.08	3.4	< 0.1	1.84
< 0.005	4.45	< 0.01	4	< 0.1	3.89
< 0.005	6.15	0.04	6	< 0.1	9.11
< 0.005	9.53	0.02	7.7	< 0.1	2.24
< 0.005	<0.03	< 0.01	< 0.1	< 0.1	<0.01

< 0.005	0.09	< 0.01	< 0.1	< 0.1	0.02
< 0.005	0.08	< 0.01	0.4	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	< 0.1	<0.01
< 0.005	1.2	0.02	2.4	< 0.1	1.48
< 0.005	1.77	< 0.01	1.3	< 0.1	11.7
< 0.005	0.88	0.02	68.7	< 0.1	1.73
< 0.005	1.13	0.04	8	< 0.1	9.02

< 0.005	2.15	0.09	2.7	< 0.1	0.38
< 0.005	2.15	0.18	3.2	< 0.1	0.38
0.064	4.25	4.21	10	< 0.1	4.66
< 0.005	3.98	0.21	6.3	< 0.1	0.78
< 0.005	4.38	0.06	5.2	< 0.1	0.78
< 0.005	0.41	0.39	0.6	< 0.1	1.02
< 0.005	0.2	< 0.01	0.3	< 0.1	2.98
< 0.005	0.2	< 0.01	0.5	< 0.1	2.52
< 0.005	0.32	0.02	3.2	< 0.1	2.34
< 0.005	0.08	< 0.01	< 0.1	< 0.1	<0.01
< 0.005	0.08	< 0.01	0.3	< 0.1	<0.01
< 0.005	0.08	< 0.01	0.9	< 0.1	<0.01
< 0.005	1.16	0.01	1.5	< 0.1	1.52
< 0.005	1.81	< 0.01	1.4	< 0.1	12.8
< 0.005	0.98	0.03	80.6	< 0.1	2.27
< 0.005	1.22	0.05	8.8	< 0.1	11

$1.12 \pm 0.09$			$1.43 \pm 0.09$	
$1.71 \pm 0.119$			$11.8 \pm 0.48$	
$0.96 \pm 0.09$		$73.7 \pm 5.2$	$2.00 \pm 0.09$	
$1.19 \pm 0.13$		$8.7 \pm 1.5$	$10.1 \pm 0.5$	

0.007	1	0.49	< 0.1	29
< 0.005	0.2	0.01	< 0.1	1.2
< 0.005	1.9	< 0.01	< 0.1	17.2
< 0.005	0.71	< 0.01	< 0.1	1.6
< 0.005	0.35	< 0.01	0.5	1.7
< 0.005	6.1	0.02	10.9	11.1
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	0.8	<0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01

< 0.005	<0.03	< 0.01	< 0.1	0.01
< 0.005	<0.03	< 0.01	0.3	0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	< 0.1	<0.01
< 0.005	<0.03	< 0.01	0.5	<0.01
< 0.005	0.97	0.01	1	1
< 0.005	1.5	< 0.01	1.3	9.6
< 0.005	1.1	0.03	87	2.4
< 0.005	1.3	0.04	11.5	11.7

ICPMS_LEACH Mn/P ug/L	ICPMS_LEACH Mo/P ug/L	ICPMS_LEACH Na/P mg/L	ICPMS_LEACH Nb/P ug/L	ICPMS_LEACH Nd/P ug/L	ICPMS_LEACH Ni/P ug/L
0.4	4.8	33.6	< 0.2	< 0.01	<0.4
0.6	8.5	9.48	< 0.2	< 0.01	<0.4
2.5	3.3	6.98	< 0.2	< 0.01	<0.4
2	4.7	12.1	< 0.2	< 0.01	0.8
2.2	6	7.74	< 0.2	< 0.01	0.7
4.2	< 2	0.05	< 0.2	0.07	<0.4
13600	< 2	0.05	< 0.2	5.2	203
3.4	25.2	0.04	< 0.2	< 0.01	<0.4
108	11.1	0.08	< 0.2	< 0.01	2
418	8	0.64	< 0.2	< 0.01	1.1
21000	< 2	0.62	< 0.2	3.25	152
150	< 2	0.16	< 0.2	0.34	628
0.4	2.9	0.12	< 0.2	< 0.01	<0.4
45.2	18.1	0.25	< 0.2	< 0.01	0.4
47.3	4.8	0.27	< 0.2	< 0.01	0.8
82.9	< 2	0.05	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
1.6	< 2	13.9	< 0.2	0.01	<0.4
<0.2	< 2	59.9	< 0.2	< 0.01	<0.4
443	51	34.4	< 0.2	0.02	68.1
100	6.3	24.9	< 0.2	0.03	16
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4

<0.2	< 2	0.04 < 0.2	< 0.01	1.2
<0.2	< 2	0.02 < 0.2	< 0.01	1
<0.2	< 2	0.01 < 0.2	< 0.01	0.7
<0.2	< 2	0.54 < 0.2	< 0.01	0.8
<0.2	< 2	0.03 < 0.2	< 0.01	0.6
<0.2	< 2	0.06 < 0.2	< 0.01	0.6
<0.2	< 2	0.06 < 0.2	< 0.01	1
<0.2	< 2	3.3 < 0.2	< 0.01	2.4
<0.2	< 2	0.03 < 0.2	< 0.01	2.3
<0.2	< 2	0.03 < 0.2	< 0.01	2.6
<0.2	< 2	0.02 < 0.2	< 0.01	2.5
<0.2	< 2	0.04 < 0.2	< 0.01	<0.4
<0.2	< 2	0.12 < 0.2	< 0.01	1.6
<0.2	< 2	0.05 < 0.2	< 0.01	2.7
<0.2	< 2	0.01 < 0.2	< 0.01	1
<0.2	< 2	0.03 < 0.2	< 0.01	1
<0.2	< 2	0.02 < 0.2	< 0.01	1.1
<0.2	< 2	0.04 < 0.2	< 0.01	<0.4
<0.2	< 2	0.03 < 0.2	< 0.01	0.5

	1.8 < 2		16.2 < 0.2		0.01 <0.4	
100		7.3	24.4 < 0.2		0.02	15.6
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4	

218	< 2	0.09	< 0.2	4.42	1.4
182	< 2	0.1	< 0.2	0.7	1.7
65.7	< 2	0.11	< 0.2	1.21	1
65.9	< 2	0.1	< 0.2	1.46	1.2
61.1	< 2	0.1	< 0.2	0.95	1.1
362	< 2	0.1	< 0.2	6.22	3
1.8	< 2	16.5	< 0.2	0.01	<0.4
<0.2	< 2	69.8	0.21	< 0.01	<0.4
91.7	7.1	20.7	< 0.2	0.02	14.8
406	55.7	30.4	< 0.2	0.02	62.9
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4

5.2	3.7	1.06	< 0.2	< 0.01	<0.4
5.3	3.8	1.06	< 0.2	< 0.01	<0.4
7	< 2	1.32	< 0.2	< 0.01	<0.4
4.6	3.4	5.34	< 0.2	< 0.01	<0.4
1310	< 2	1.19	< 0.2	8.4	20.2
1290	3.6	0.35	< 0.2	25.5	86200
891	< 2	0.48	< 0.2	0.07	13500
1.5	< 2	1.96	< 0.2	< 0.01	1
131	< 2	0.17	< 0.2	0.01	3120
1.5	2.7	1.18	< 0.2	0.04	1.2
171	< 2	0.59	< 0.2	122	9.4
0.2	13	13.9	< 0.2	< 0.01	<0.4
1380	55.4	8.28	< 0.2	9.98	34.4
1.8	< 2	16.2	< 0.2	0.01	<0.4
100	7.3	24.4	< 0.2	0.02	15.6

0.8	< 2	0.05	< 0.2	< 0.01	1.4
0.7	< 2	0.03	< 0.2	< 0.01	1.5
0.2	< 2	0.05	< 0.2	< 0.01	2.8
0.2	< 2	0.03	< 0.2	< 0.01	3
66.1	< 2	0.08	< 0.2	4.48	7.9
35.1	< 2	0.1	< 0.2	4.98	7.5
56.3	< 2	0.06	< 0.2	13.8	406
28.4	< 2	0.05	< 0.2	0.07	445
16.8	< 2	0.15	< 0.2	0.12	16.6
18.6	< 2	0.21	< 0.2	0.01	56.1
37.6	< 2	0.27	< 0.2	0.04	125
30.8	< 2	0.41	< 0.2	0.03	576
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4

<0.2	< 2	<0.01	< 0.2	< 0.01	2
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
2.9	< 2	19.7	0.54	0.02	<0.4
<0.2	< 2	72.6	< 0.2	< 0.01	<0.4
432	56.4	28.7	< 0.2	0.03	62
93	7.8	19.7	< 0.2	0.04	14.8

20	< 2	4.67	< 0.2	0.06	<0.4
18.7	< 2	4.61	< 0.2	0.16	<0.4
644	< 2	0.97	< 0.2	2.63	484
11.9	4.2	5.33	< 0.2	0.18	<0.4
5.1	6.9	4.21	< 0.2	0.05	<0.4
2.6	< 2	8.71	< 0.2	0.11	2.1
34.1	< 2	0.71	< 0.2	< 0.01	<0.4
32.9	3.9	0.38	< 0.2	< 0.01	<0.4
24.4	5.5	1.6	< 0.2	0.02	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
2.4	< 2	18.8	< 0.2	0.02	<0.4
<0.2	< 2	79.8	< 0.2	< 0.01	<0.4
436	57.8	34.7	< 0.2	0.02	67.6
104	7.1	24	< 0.2	0.03	15.4

		17.5±1.0			
		71.7±2.22			
423±20	63.0±5.1	30.8±1.2		65.6±5.0	
98±5	8.9±1.8	22.0±1.1		15.0±2.5	

1880	2.4	0.12	< 0.2	0.27	43
0.68	< 2	0.03	< 0.2	< 0.01	<0.4
183	< 2	0.07	< 0.2	< 0.01	<0.4
4.1	< 2	0.06	< 0.2	< 0.01	<0.4
<0.2	< 2	0.06	< 0.2	< 0.01	<0.4
27	449	103	< 0.2	0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
0.4	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4

0.4	< 2	0.05	< 0.2	< 0.01	<0.4
0.4	< 2	0.05	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
<0.2	< 2	<0.01	< 0.2	< 0.01	<0.4
1.9	< 2	13.5	< 0.2	0.02	<0.4
<0.2	< 2	59.3	< 0.2	< 0.01	<0.4
440	56	39.2	< 0.2	0.03	67.1
89.8	7.4	25.1	< 0.2	0.03	14.4

ICPMS_LEACH P/P mg/L	ICPMS_LEACH Pb/P ug/L	ICPMS_LEACH Pr/P ug/L	ICPMS_LEACH Rb/P ug/L	ICPMS_LEACH Sb/P ug/L	ICPMS_LEACH Sc/P ug/L
0.04	<0.05	< 0.01	2.83	2.44	< 0.6
< 0.01	<0.05	< 0.01	0.91	347	< 0.6
< 0.01	<0.05	< 0.01	0.5	357	< 0.6
< 0.01	<0.05	< 0.01	0.53	160	< 0.6
< 0.01	<0.05	< 0.01	0.87	130	< 0.6
< 0.01	1.9	0.02	1.11	<0.3	< 0.6
< 0.01	3190	1.4	2.64	<0.3	< 0.6
< 0.01	0.96	< 0.01	0.68	0.91	< 0.6
< 0.01	1.9	< 0.01	1.48	<0.3	< 0.6
< 0.01	23.4	< 0.01	2.59	0.82	< 0.6
< 0.01	0.08	0.86	41.9	<0.3	< 0.6
< 0.01	0.2	0.09	10.6	<0.3	0.6
< 0.01	5.2	< 0.01	0.29	5.9	< 0.6
< 0.01	2.8	< 0.01	0.45	1.51	< 0.6
< 0.01	88.2	< 0.01	5.85	0.64	< 0.6
< 0.01	6.6	< 0.01	0.2	1.23	< 0.6
< 0.01	<0.05	< 0.01	< 0.01	<0.3	< 0.6
< 0.01	<0.05	< 0.01	0.02	<0.3	< 0.6
< 0.01	<0.05	< 0.01	0.02	<0.3	< 0.6
< 0.01	<0.05	< 0.01	0.33	<0.3	1
0.1	<0.05	< 0.01	0.31	<0.3	1.3
0.03	99.1	< 0.01	0.66	81	0.7
0.06	5.9	< 0.01	0.86	16.9	0.9
< 0.01	<0.05	< 0.01	< 0.01	<0.3	< 0.6
< 0.01	<0.05	< 0.01	< 0.01	<0.3	< 0.6
< 0.01	<0.05	< 0.01	< 0.01	<0.3	< 0.6
< 0.01	<0.05	< 0.01	< 0.01	<0.3	< 0.6

< 0.01	<0.05	< 0.01	0.1	<0.3	< 0.6
< 0.01	<0.05	< 0.01	0.17	<0.3	< 0.6
< 0.01	<0.05	< 0.01	0.13	<0.3	< 0.6
< 0.01	<0.05	< 0.01	0.33		1.52 < 0.6
< 0.01	<0.05	< 0.01	0.1		0.65 < 0.6
< 0.01	<0.05	< 0.01	0.11		0.58 < 0.6
< 0.01	<0.05	< 0.01	0.2		0.63 < 0.6
< 0.01	<0.05	< 0.01	1.27		2.33 < 0.6
< 0.01	<0.05	< 0.01	0.11		1.71 < 0.6
< 0.01	<0.05	< 0.01	0.14		1 < 0.6
< 0.01	<0.05	< 0.01	0.11		0.96 < 0.6
< 0.01	<0.05	< 0.01	0.15		0.3 < 0.6
< 0.01	<0.05	< 0.01	0.23		0.95 < 0.6
< 0.01	<0.05	< 0.01	0.17		0.46 < 0.6
< 0.01	<0.05	< 0.01	0.22		1.59 < 0.6
< 0.01	<0.05	< 0.01	0.12		0.55 < 0.6
< 0.01	<0.05	< 0.01	0.12		0.54 < 0.6
< 0.01	<0.05	< 0.01	0.21		0.61 < 0.6
< 0.01	<0.05	< 0.01	0.16	<0.3	< 0.6

< 0.01	<0.05	< 0.01	0.34	0.31	1.2
	0.06	6	0.8	16.8	1
< 0.01	<0.05	< 0.01	<0.3	< 0.6	

< 0.01	7380	1.08	4.42	0.3	< 0.6
< 0.01	89.1	0.17	4.48	<0.3	< 0.6
< 0.01	5140	0.34	1.07	1.76	< 0.6
< 0.01	5120	0.43	1.08	2.44	< 0.6
< 0.01	3470	0.29	0.5	1.26	0.7
< 0.01	4030	1.52	4.66	<0.3	< 0.6
< 0.01	<0.05	< 0.01	0.32	0.33	1.2
0.2	0.2	< 0.01	0.31	0.39	1.5
0.05	6.1	< 0.01	0.79	16.6	0.7
0.02	99.3	< 0.01	0.55	79.7	< 0.6
< 0.01	<0.05	< 0.01	<0.3	< 0.6	

< 0.01	<0.05	< 0.01	1.02	0.44	< 0.6
< 0.01	<0.05	< 0.01	1.03	0.36	< 0.6
< 0.01	<0.05	< 0.01	12.5	0.95	< 0.6
< 0.01	<0.05	< 0.01	11.5	0.6	< 0.6
< 0.01	6.1	1.84	2.94	<0.3	< 0.6
< 0.01	0.2	6.7	1.01	<0.3	9.5
< 0.01	0.09	0.03	19.2	<0.3	< 0.6
< 0.01	<0.05	< 0.01	14	0.4	< 0.6
< 0.01	<0.05	< 0.01	0.92	<0.3	< 0.6
< 0.01	0.05	0.02	34.4	<0.3	< 0.6
< 0.01	66.4	35.1	16.2	<0.3	< 0.6
< 0.01	0.2	< 0.01	0.43	<0.3	< 0.6
< 0.01	0.7	2.32	5.07	1.12	0.8
< 0.01	<0.05	< 0.01	0.34	0.31	1.2
0.06	6	0.01	0.8	16.8	1

< 0.01	<0.05	< 0.01	5.23	2	< 0.6
< 0.01	<0.05	< 0.01	4.19	2	< 0.6
< 0.01	<0.05	< 0.01	3.74	0.63	< 0.6
< 0.01	<0.05	< 0.01	3.26	0.63	< 0.6
< 0.01	549	1.32	7.53	<0.3	< 0.6
< 0.01	283	1.31	6.34	<0.3	0.6
< 0.01	361	3.49	8.29	0.31	1
< 0.01	0.3	0.01	4.92	<0.3	< 0.6
< 0.01	<0.05	0.03	10.5	<0.3	< 0.6
< 0.01	<0.05	< 0.01	25.8	<0.3	0.6
< 0.01	0.07	< 0.01	46.1	<0.3	< 0.6
< 0.01	0.67	< 0.01	57.8	<0.3	< 0.6
< 0.01	<0.05	< 0.01	<0.3	< 0.6	

< 0.01	0.2	< 0.01	0.04	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	0.2	< 0.01	0.02	< 0.3	< 0.6
< 0.01	0.06	< 0.01	0.42	< 0.3	1
0.2	< 0.05	< 0.01	0.32	< 0.3	1.2
0.02	101	< 0.01	0.56	75.2	< 0.6
0.05	6.2	0.01	0.79	15.7	< 0.6

< 0.01	< 0.05	0.02	4.47	0.47	< 0.6
< 0.01	< 0.05	0.04	4.65	0.48	< 0.6
< 0.01	10.6	0.7	20.3	12.8	< 0.6
< 0.01	< 0.05	0.04	4.27	6.96	< 0.6
< 0.01	< 0.05	0.01	6.1	34.8	< 0.6
0.02	0.4	0.03	0.39	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	0.16	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	0.14	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	0.43	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	0.4	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	0.35	< 0.3	1.2
0.2	< 0.05	< 0.01	0.33	0.54	1.5
0.02	115	< 0.01	0.61	74.2	< 0.6
0.06	7.8	< 0.01	0.84	15.4	0.6

<i>0.190±0.013</i>	<i>103±7</i>	<i>76.3±8.7</i>
	<i>6.3±1.0</i>	<i>15.5±2.7</i>

0.07	0.59	0.06	0.76	< 0.3	< 0.6
< 0.01	0.5	< 0.01	0.2	< 0.3	< 0.6
0.06	1.86	< 0.01	1.6	< 0.3	< 0.6
0.01	93.3	< 0.01	0.58	0.47	< 0.6
< 0.01	10.1	< 0.01	0.16	< 0.3	< 0.6
0.1	< 0.05	< 0.01	10	0.82	0.8
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6
< 0.01	< 0.05	< 0.01	< 0.01	< 0.3	< 0.6

0.1	0.33	< 0.01	0.01	0.53	< 0.6
0.1	0.18	< 0.01	0.01	<0.3	< 0.6
0.1	0.11	< 0.01	< 0.01	<0.3	< 0.6
0.1	0.1	< 0.01	< 0.01	<0.3	< 0.6
< 0.01	<0.05	< 0.01	< 0.01	<0.3	< 0.6
< 0.01	<0.05	< 0.01	< 0.01	<0.3	< 0.6
< 0.01	<0.05	< 0.01	< 0.01	<0.3	< 0.6
< 0.01	<0.05	< 0.01	< 0.01	<0.3	< 0.6
< 0.01	<0.05	< 0.01	< 0.01	<0.3	< 0.6
< 0.01	<0.05	< 0.01	< 0.01	<0.3	< 0.6
< 0.01	<0.05	< 0.01	0.3	<0.3	0.6
0.2	<0.05	< 0.01	0.3	0.36	1.1
0.03	110	< 0.01	0.59	80.7	< 0.6
0.06	6.1	< 0.01	0.81	16.1	< 0.6

ICPMS_LEACH Se/P ug/L	ICPMS_LEACH SiO2/P mg/L	ICPMS_LEACH Sm/P ug/L	ICPMS_LEACH SO4/P mg/L	ICPMS_LEACH Sr/P ug/L	ICPMS_LEACH Ta/P ug/L
9.6	7.5	< 0.01	70	27.8	< 0.02
1.4	0.4	< 0.01	101	55.8	< 0.02
1.8	< 0.2	< 0.01	44	39.8	< 0.02
1.6	< 0.2	< 0.01	356	136	< 0.02
2	0.6	< 0.01	326	201	< 0.02
< 1	< 0.2	0.02	2	1.88	< 0.02
2.5	0.7	1.28	464	23.1	< 0.02
< 1	< 0.2	< 0.01	6	8.48	< 0.02
< 1	< 0.2	< 0.01	522	55.5	< 0.02
2.4	< 0.2	< 0.01	204	75.9	< 0.02
6.9	< 0.2	0.59	1780	301	< 0.02
7.9	8.7	0.08	891	65	< 0.02
< 1	< 0.2	< 0.01	102	40	< 0.02
< 1	< 0.2	< 0.01	276	34.8	< 0.02
6.6	2	< 0.01	267	113	< 0.02
< 1	< 0.2	< 0.01	66	10.6	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	14	< 0.01	< 2	46.3	< 0.02
< 1	18.7	< 0.01	90	58.8	0.03
11.4	6.2	< 0.01	12	47.4	< 0.02
< 1	10.6	0.01	60	233	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02

< 1	2.3 < 0.01	< 2		1.77 < 0.02
< 1	0.6 < 0.01		4	0.99 0.08
< 1	2.2 < 0.01	< 2		1.49 < 0.02
< 1	0.2 < 0.01		20	1.77 < 0.02
< 1	0.8 < 0.01	< 2		1.02 0.07
< 1	0.4 < 0.01		4 < 0.5	< 0.02
< 1	0.3 < 0.01		3	0.64 < 0.02
1 < 0.2	< 0.01		194	5.14 0.2
< 1	0.4 < 0.01		11	1.05 < 0.02
< 1	0.3 < 0.01		7	0.92 < 0.02
< 1	0.2 < 0.01		8	1.06 < 0.02
< 1	0.2 < 0.01		11	1.16 < 0.02
< 1	1 < 0.01	< 2		5.37 < 0.02
< 1	1.5 < 0.01		2	9.32 < 0.02
< 1	0.2 < 0.01		10	1.33 < 0.02
< 1	0.3 < 0.01		7	0.51 < 0.02
< 1	0.3 < 0.01		8	0.52 < 0.02
< 1	0.2 < 0.01		10	0.74 < 0.02
< 1	1.2 < 0.01	< 2		1.59 < 0.02

< 1		11.4	< 0.01	4	46.8	0.2
< 1		7.6	< 0.01	59	213	< 0.02
< 1	< 0.2		< 0.01	< 2	< 0.5	< 0.02

< 1	2	1.08	62	12.1	0.03
< 1	1.8	0.15	39	2.46	0.05
< 1	1.4	0.24	155	45.3	0.07
< 1	1.5	0.29	161	36.2	0.05
< 1	2.2	0.16	211	65.2	0.04
< 1	1.9	1.4	217	46.8	0.1
< 1	11.5	< 0.01	6	44.1	0.05
< 1	14.4	< 0.01	103	59.3	0.09
< 1	6.2	< 0.01	47	224	< 0.02
11.2	4	< 0.01	7	44	< 0.02
< 1	< 0.2	< 0.01	2	< 0.5	< 0.02

2.2	0.9	< 0.01	53	26.9	0.09
2	0.9	< 0.01	55	27.2	0.07
1.2	3.1	< 0.01	9	26.1	0.06
1.9	4.2	< 0.01	16	92	0.08
37.2	3.5	2.52	1200	174	< 0.02
2.9	0.6	4.54	1880	30.1	0.1
7.9	2.3	0.02	501	128	< 0.02
1.5	2	< 0.01	64	45.2	0.03
3.2	5.4	< 0.01	72	17.7	< 0.02
< 1	1.8	< 0.01	750	3580	0.06
3.1	1.2	27.2	454	123	< 0.02
2.6	2.7	< 0.01	5	22.9	< 0.02
4.4	4.2	2.01	2370	397	< 0.02
< 1	11.4	< 0.01	4	46.8	0.2
< 1	7.6	< 0.01	59	213	< 0.02

< 1	< 0.2	< 0.01	< 2	1.85	< 0.02
< 1	0.2	< 0.01	4	2.09	< 0.02
< 1	< 0.2	< 0.01	16	2.91	< 0.02
< 1	< 0.2	< 0.01	9	2.71	< 0.02
1.5	1.5	0.86	123	2.55	< 0.02
1	2	1.1	100	2.69	< 0.02
2.5	1.1	2.85	430	107	< 0.02
5.1	1.6	0.01	75	< 0.5	< 0.02
< 1	2.8	0.03	15	5.79	< 0.02
< 1	7.6	< 0.01	20	3.58	< 0.02
< 1	6.7	0.01	45	8.92	< 0.02
< 1	4.7	< 0.01	28	9.81	< 0.02
< 1	< 0.2	< 0.01	3	< 0.5	< 0.02

< 1	< 0.2	< 0.01	7	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	1290	< 0.5	< 0.02
< 1	12	< 0.01	< 2	52.1	0.08
< 1	15.2	< 0.01	93	62.9	< 0.02
11.5	4	< 0.01	< 2	43.7	< 0.02
< 1	6.8	< 0.01	39	221	< 0.02

< 1	1.8	0.01	43	60.2	< 0.02
< 1	1.9	0.01	42	61.7	0.04
7.3	2.5	0.44	106	150	0.02
2.3	4.9	0.04	59	115	< 0.02
4	3.6	0.01	114	156	< 0.02
< 1	4	< 0.01	6	11.6	0.02
1.1	4.5	< 0.01	3	15	< 0.02
< 1	3.4	< 0.01	3	25	< 0.02
< 1	2.8	< 0.01	7	24.6	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	13.1	< 0.01	6	49.9	0.1
< 1	17.6	< 0.01	108	64.9	0.1
11.7	4.4	< 0.01	8	47	< 0.02
< 1	7.2	< 0.01	50	228	0.03

10.0±1.4	12.6±0.8	5.50±0.54	51.0±2.5
	15.0±0.67	105±3.7	63.6±1.85
	4.28±0.31		46.0±2.3
	6.96±0.56		230±14

< 1	0.6	0.04	1500	88.4	< 0.02
< 1	< 0.2	< 0.01	7.1	2.6	< 0.02
< 1	< 0.2	< 0.01	1500	234	< 0.02
< 1	0.4	< 0.01	410	33.6	< 0.02
< 1	0.5	< 0.01	6.2	5.3	< 0.02
84.1	5.9	< 0.01	1400	5210	0.08
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02

< 1	< 0.2	< 0.01	2900	< 0.5	< 0.02
< 1	< 0.2	< 0.01	2800	< 0.5	< 0.02
< 1	< 0.2	< 0.01	2600	< 0.5	< 0.02
< 1	< 0.2	< 0.01	2600	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	< 0.2	< 0.01	< 2	< 0.5	< 0.02
< 1	10	< 0.01	< 2	41.4	0.1
1.5	13	< 0.01	91	57.4	0.2
13.7	4.9	0.01	7.7	46.1	< 0.02
< 1	7.5	< 0.01	53	236	< 0.02



< 0.005	< 0.2		0.6 <0.1	< 0.005	< 0.1	
< 0.005	< 0.2		1.1	170 < 0.005		9.35
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1	

0.11	< 0.2	1.6	0.2	0.02	0.62
0.02	< 0.2	< 0.5	0.3	< 0.005	0.16
0.02	< 0.2	8.9	0.1	0.009	0.19
0.03	< 0.2	10.2	0.1	0.01	0.22
0.02	< 0.2	21.6	<0.1	0.008	0.17
0.16	< 0.2	4.1	0.2	0.05	1.03
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	1.1	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	0.6	165	< 0.005	9.39
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	0.23
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1

< 0.005	< 0.2	0.8	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	0.7	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	1.28
< 0.005	< 0.2	0.5	<0.1	< 0.005	< 0.1
0.26	< 0.2	17	0.8	0.074	41.3
0.54	7.32	36.4	<0.1	0.2	5.78
0.005	< 0.2	6.3	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	0.9	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	1	<0.1	< 0.005	0.52
< 0.005	< 0.2	10.2	<0.1	< 0.005	20.4
3.83	< 0.2	6.2	0.2	0.6	4.53
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	31.3
0.4	< 0.2	32.5	0.4	0.04	329
< 0.005	< 0.2	0.6	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	1.1	170	< 0.005	9.35

< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
0.093	< 0.2	8.4	5	0.03	0.35
0.14	< 0.2	3.7	4	0.05	0.87
0.2	< 0.2	4.8	0.3	0.052	5.93
< 0.005	< 0.2	0.9	<0.1	< 0.005	0.47
< 0.005	< 0.2	0.8	0.2	< 0.005	0.16
< 0.005	< 0.2	< 0.5	0.3	< 0.005	< 0.1
< 0.005	< 0.2	0.9	0.4	< 0.005	0.38
< 0.005	< 0.2	< 0.5	0.86	< 0.005	0.41
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1

< 0.005	< 0.2	1	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	14.4	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	1	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	1.2	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	0.24
< 0.005	< 0.2	0.9	161	< 0.005	9.56

< 0.005	< 0.2	3.2	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	5.5	<0.1	< 0.005	0.1
0.084	< 0.2	1.9	0.4	0.02	10.5
< 0.005	< 0.2	9.7	<0.1	< 0.005	0.15
< 0.005	< 0.2	3.1	<0.1	< 0.005	0.17
< 0.005	< 0.2	1.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	1.7	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	0.32
< 0.005	< 0.2	0.8	178	< 0.005	12.1

			162±23	10.0±0.5
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0.006	< 0.2	18.3	0.4	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	19.8	0.17	< 0.005	0.19
< 0.005	< 0.2	4.9	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	0.21	16.7	1.16	< 0.005	23.8
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1

< 0.005	< 0.2	29.3	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	28.2	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	25.6	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	27.3	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	< 0.5	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	1.3	<0.1	< 0.005	< 0.1
< 0.005	< 0.2	0.6	0.31	< 0.005	0.3
< 0.005	< 0.2	0.8	175	< 0.005	8.83

ICPMS_LEACH V/P ug/L	ICPMS_LEACH W/P ug/L	ICPMS_LEACH Y/P ug/L	ICPMS_LEACH Yb/P ug/L	ICPMS_LEACH Zn/P ug/L	ICPMS_LEACH Zr/P ug/L
3.6	1.24	< 0.01	< 0.005	<0.5	< 0.2
0.8	< 0.5	< 0.01	< 0.005	0.6	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	0.8	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	1.5	< 0.2
0.6	< 0.5	< 0.01	< 0.005	1.2	< 0.2
<0.5	< 0.5	0.02	< 0.005	10.6	< 0.2
<0.5	< 0.5	13.6	0.83	68600	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	42.9	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	539	< 0.2
<0.5	< 0.5	0.02	< 0.005	1270	< 0.2
<0.5	< 0.5	8.25	0.21	1250	< 0.2
<0.5	< 0.5	0.52	0.03	8290	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	3.9	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	87.8	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	131	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	211	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	2.2	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	0.6	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	1.6	< 0.2
21.7	< 0.5	0.01	< 0.005	0.6	< 0.2
8.6	0.51	< 0.01	< 0.005	<0.5	< 0.2
55.5	< 0.5	0.03	0.007	55.2	< 0.2
14	< 0.5	0.06	0.01	53.2	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2

<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	0.78	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	3.74	< 0.01	< 0.005	0.6	0.4
<0.5	1.55	< 0.01	< 0.005	<0.5	< 0.2
<0.5	0.88	< 0.01	< 0.005	<0.5	< 0.2
<0.5	1.02	< 0.01	< 0.005	<0.5	< 0.2
<0.5	0.55	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	1.54	< 0.01	< 0.005	<0.5	< 0.2
<0.5	0.55	< 0.01	< 0.005	<0.5	< 0.2
<0.5	0.54	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2

	27.7	8.1	0.01	< 0.005	0.6	< 0.2
	13.8	< 0.5	0.05	0.01	49.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2	

<0.5	< 0.5	1.57	0.14	1530	< 0.2
<0.5	< 0.5	0.35	0.03	1680	< 0.2
<0.5	< 0.5	0.46	0.07	4750	0.4
<0.5	< 0.5	0.56	0.08	3580	0.3
<0.5	< 0.5	0.38	0.06	2350	0.2
<0.5	< 0.5	3.24	0.33	6310	< 0.2
24.4	1.4	< 0.01	< 0.005	0.7	< 0.2
9.7	0.93	< 0.01	< 0.005	<0.5	< 0.2
12.5	< 0.5	0.05	0.007	50.1	< 0.2
48.5	< 0.5	0.03	0.006	49	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2

<0.5	1.07	< 0.01	< 0.005	<0.5	< 0.2
<0.5	1.14	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
5.1	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	6.39	0.42	191	< 0.2
<0.5	< 0.5	13.4	1.28	630	0.2
<0.5	< 0.5	0.35	0.01	65.6	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	0.03	< 0.005	13.1	< 0.2
<0.5	< 0.5	0.1	< 0.005	1.6	0.2
<0.5	< 0.5	89.1	2.86	32	< 0.2
15.4	< 0.5	< 0.01	< 0.005	0.7	< 0.2
2.3	< 0.5	7.64	0.14	9.4	< 0.2
27.7	8.1	0.01	< 0.005	0.6	< 0.2
13.8	< 0.5	0.05	0.01	49.5	< 0.2

<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	1.89	0.2	406	< 0.2
<0.5	< 0.5	2.7	0.28	630	< 0.2
<0.5	< 0.5	2.63	0.39	7300	< 0.2
<0.5	< 0.5	0.08	0.01	6440	< 0.2
<0.5	< 0.5	0.07	0.006	4.1	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	3	< 0.2
<0.5	< 0.5	0.05	< 0.005	5.5	< 0.2
<0.5	< 0.5	0.02	< 0.005	6.4	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2

<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	0.006	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	15.9	< 0.2
32	< 0.5	0.02	< 0.005	2.4	< 0.2
12.6	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
50.3	< 0.5	0.03	< 0.005	50.4	< 0.2
13.2	< 0.5	0.05	0.009	51.2	< 0.2

<0.5	0.85	0.02	< 0.005	0.6	< 0.2
<0.5	0.86	0.04	< 0.005	<0.5	< 0.2
<0.5	< 0.5	2.31	0.11	1300	< 0.2
1.2	1.55	0.05	< 0.005	1.3	< 0.2
<0.5	0.68	0.02	< 0.005	0.5	< 0.2
3.1	< 0.5	0.02	< 0.005	0.9	< 0.2
<0.5	< 0.5	0.02	< 0.005	0.6	< 0.2
0.5	< 0.5	0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	0.02	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	0.8	< 0.2
<0.5	< 0.5	< 0.01	< 0.005	<0.5	< 0.2
30.4	1.95	< 0.01	< 0.005	0.8	< 0.2
13.1	1.99	< 0.01	< 0.005	<0.5	< 0.2
55.3	< 0.5	0.03	0.01	55.8	< 0.2
14.1	< 0.5	0.06	0.01	56.9	< 0.2

$31.0 \pm 1.9$					
$11.3 \pm 0.82$					
$52.8 \pm 3.6$				$48.2 \pm 4.7$	
$14.0 \pm 1.6$				$49.5 \pm 4.2$	

<0.5	< 0.5	0.47	0.01	2580
<0.5	< 0.5	< 0.01	< 0.01	36.9
<0.5	1.2	< 0.01	< 0.01	3090
<0.5	1.7	< 0.01	< 0.01	74
<0.5	< 0.5	< 0.01	< 0.01	16.7
497	1.3	0.06	< 0.01	<3
<0.5	< 0.5	< 0.01	< 0.01	<3
<0.5	< 0.5	< 0.01	< 0.01	3.1
<0.5	< 0.5	< 0.01	< 0.01	3.5
<0.5	< 0.5	< 0.01	< 0.01	<3
<0.5	< 0.5	< 0.01	< 0.01	<3
<0.5	< 0.5	< 0.01	< 0.01	3.9
<0.5	< 0.5	< 0.01	< 0.01	<3
<0.5	< 0.5	< 0.01	< 0.01	<3
<0.5	< 0.5	< 0.01	< 0.01	<3
<0.5	< 0.5	< 0.01	< 0.01	7.3
<0.5	< 0.5	< 0.01	< 0.01	<3
<0.5	< 0.5	< 0.01	< 0.01	<3
<0.5	< 0.5	< 0.01	< 0.01	<3

<0.5	< 0.5	< 0.01	< 0.01	10.7
<0.5	< 0.5	< 0.01	< 0.01	11.7
<0.5	< 0.5	< 0.01	< 0.01	4.2
<0.5	< 0.5	< 0.01	< 0.01	4.2
<0.5	< 0.5	< 0.01	< 0.01	<3
<0.5	< 0.5	< 0.01	< 0.01	<3
<0.5	< 0.5	< 0.01	< 0.01	<3
<0.5	< 0.5	< 0.01	< 0.01	<3
<0.5	< 0.5	< 0.01	< 0.01	<3
24.7	14	0.01	< 0.01	<3
10.3	8.9	< 0.01	< 0.01	<3
45.9	< 0.5	0.03	< 0.01	59.9
11	< 0.5	0.05	< 0.01	58.1

Job No.	Lab No.	Field No.	IC-Aq Cl ppm	IC-Aq F ppm	IC-Aq NO3 ppm	IC-Aq SO4 ppm	Job No.
MRP-07991	C-296468	NZNewmontA FU	6.3	2	3.5	86	MRP-0802E
MRP-07991	C-296469	Giant S FU	14.7	0.16	0.7	110	MRP-0802E
MRP-07991	C-296470	Giant NW FU	17	0.4	1.2	59	MRP-0802E
MRP-07991	C-296471	Gaint Central FU	17	0.3	1.3	290	MRP-0802E
MRP-07991	C-296472	Gaint N FU	11	<.08	1.2	291	MRP-0802E
MRP-07991	C-296473	Ptarmigan FU	<.08	<.08	0.55	3.2	MRP-0802E
MRP-07991	C-296474	Anvil-Faro FU	6.7	<.08	<.08	445	MRP-0802E
MRP-07991	C-296475	USGS-CLTPC FU	1.2	<.08	0.5	8.4	MRP-0802E
MRP-07991	C-296476	USGS-CLTPF FU	6.2	<.08	<.08	448	MRP-0802E
MRP-07991	C-296477	CLHN-TP-2 FU	3	0.3	0.8	222	MRP-0802E
MRP-07991	C-296478	TP1-N FU	12	0.9	<.08	1601	MRP-0802E
MRP-07991	C-296479	TP1-S FU	12	0.9	<.08	970	MRP-0802E
MRP-07991	C-296486	02JH99 FU	0.4	1.3	0.9	131	MRP-0802E
MRP-07991	C-296487	05JH99 FU	2.6	1.7	0.7	280	MRP-0802E
MRP-07991	C-296488	06JH99 FU	2.5	1.7	0.8	277	MRP-0802E
MRP-07991	C-296489	08JH99 FU	0.8	1.4	0.4	85	MRP-0802E
MRP-07991	C-296480	WSP-1 FU	<.08	<.08	<.08	<.08	
MRP-07991	C-296490	WSP-2 RU	<.08	<.08	<.08	<.08	
MRP-07991	C-296484	Blk-WSP-2 FA	1.4	<.08	0.4	4	
MRP-07991	C-296481	M-150	18	1.1	8.1	5.7	
MRP-07991	C-296482	M-158	92	0.4	1.1	106.8	

MRP-08518	C-305953	07LW-1 FU		0.8 <.08	3.4	4.4 MRP-0851
MRP-08518	C-305954	07LW-2 FU	<.08	<.08	3.8	5.7 MRP-0851
MRP-08518	C-305955	07LW-3 FU	<.08	<.08	2.4	3.7 MRP-0851
MRP-08518	C-305956	07BMPO-1 FU		1 <.08	5.3	9.4 MRP-0851
MRP-08518	C-305957	07CT-1 FU		0.7 <.08	3	2.7 MRP-0851
MRP-08518	C-305958	07CT-2 FU		0.7 0.12	3.3	3.4 MRP-0851
MRP-08518	C-305959	07CT-3 FU		0.5 <.08	3.2	2 MRP-0851
MRP-08518	C-305960	07BMPO-2 FU		6 0.7	35	175 MRP-0851
MRP-08518	C-305961	07ET-1 FU		0.8 <.08	1.7	4.6 MRP-0851
MRP-08518	C-305962	07ET-2 FU		0.6 0.2	1.6	4.4 MRP-0851
MRP-08518	C-305963	07ET-3 FU		0.5 0.2	1.8	4.4 MRP-0851
MRP-08518	C-305964	07ET-4 FU		0.65 0.2	1.9	2 MRP-0851
MRP-08518	C-305965	07EM-1 FU		0.54 <.08	4.6	3 MRP-0851
MRP-08518	C-305966	07EM-2 FU		0.5 0.12	3.2	4.1 MRP-0851
MRP-08518	C-305967	07CT-4 FU		0.54 <.08	1	3 MRP-0851
MRP-08518	C-305968	07CT-5 FU		0.65 0.12	1.3	2.1 MRP-0851
MRP-08518	C-305971	07CT-5 Dup FU		0.69 0.12	1.4	2 MRP-0851
MRP-08518	C-305969	07CT-6 FU		0.62 0.13	2.7	3.6 MRP-0851
MRP-08518	C-305970	07CW-1 FU	<.08	<.08	5.4	3.6 MRP-0851

MRP-08434	C-304666	WSP3 RU	1.2	<.08	1.6	1.2
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MRP-08586	C-307182	07Cofer1A FU	0.8	0.23	1.3	88
MRP-08586	C-307181	07Cofer1B FU	0.7	0.22	1.2	51
MRP-08586	C-307185	07Cofer2 FU	3.5	0.6	<.08	172.1
MRP-08586	C-307186	07Cofer2R FU	7.4	<.08	<.08	168.4
MRP-08586	C-307187	07Cofer2-1 FU	2.9	<.08	<.08	323.6
MRP-08586	C-307184	07Cofer3 FU	3.6	0.8	<.08	233
MRP-08586	C-307180	M-150	17.5	1.2	9.8	5.5
MRP-08586	C-307183	M-158	86.7	0.8	6.3	107.8

MRP-08434	C-304667	WSP4 RU	<.08	<.08	<.08	1.3
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MRP-08518	C-305940	GTS-2 FU	0.9	0.3	1.2	56.6	MRP-0851C
MRP-08518	C-305941	GTS-2 Dup FU	0.8	0.2	1.2	57.8	MRP-0851C
MRP-08518	C-305942	KZK-1 FU	0.9	<.08	1.3	9	MRP-0851C
MRP-08518	C-305943	NBM-1 FU	1.7	0.4	1.4	17.2	MRP-0851C
MRP-08518	C-305944	RTS-1 FU	7.3	1.6	<.08	1480	MRP-0851C
MRP-08518	C-305945	RTS-2 FU	17.2	<.08	<.08	2788	MRP-0851C
MRP-08518	C-305946	RTS-4 FU	3.9	0.7	<.08	633	MRP-0851C
MRP-08518	C-305947	TLS-1 FU	1.8	0.2	1.8	72	MRP-0851C
MRP-08518	C-305948	UMT-1 FU	0.7	0.15	1.3	97	MRP-0851C
MRP-08518	C-305949	UTS-1 FU	7.3	1.2	<.08	940	MRP-0851C
MRP-08518	C-305950	UTS-2 FU	4.4	0.7	6.4	563	MRP-0851C
MRP-08518	C-305951	UTS-3 FU	1.7	0.3	1.3	9.5	MRP-0851C
MRP-08518	C-305952	UTS-4 FU	28.7	2.7	<.08	2790	MRP-0851C
MRP-08518	C-305972	M-158	91.3	0.5	3.7	107.2	

MRP-0851C

MRP-08434	C-304667	WSP4 RU	<.08	<.08	<.08	1.3
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MRP-10007	C-326814	LuikonMag1 FU	0.6	0.1	0.7	3.1
MRP-10007	C-326815	LuikonMag2 FU	0.6	0.12	0.8	4.1
MRP-10007	C-326817	LuikonPy1 FU	<.08	0.36	<.08	13.2
MRP-10007	C-326816	LuikonPy2 FU	0.6	0.12	0.7	9.6
MRP-10007	C-326826	HammasOx1 FU	2	0.7	<.08	155.6
MRP-10007	C-326825	HammasOx2 FU	1.5	0.64	<.08	127.7
MRP-10007	C-326827	HammasUnox1 FU	0.6	0.5	<.08	557.3
MRP-10007	C-326822	HammasUnox2 FU	0.6	0.3	<.08	69
MRP-10007	C-326821	Kotalahti1 FU	1.7	0.4	2.2	30.1
MRP-10007	C-326819	Kotalahti2 FU	1.7	0.4	<.08	30.6
MRP-10007	C-326823	Kotalahti3 FU	0.56	0.3	<.08	60.7
MRP-10007	C-326818	Kotalahti4 FU	0.7	0.35	<.08	31.4
MRP-10007	C-326804	WSP4- 110408 RU	<.08	0.11	<.08	1.4

MRP-10007	C-326805	WSP5- 110408 RU	0.6	0.112	0.7	1.4
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MRP-10007	C-326820	M-150	16	0.9	8	5.8
MRP-10007	C-326824	M-158	88.9	0.5	1.8	105.5

MRP-10476	C-335071	Atik 1 FU	0.8	0.2	0.7	43.6
MRP-10476	C-335070	Atik 1-Dup FU	0.7	0.3	0.7	43.2
MRP-10476	C-335073	Atik 2 FU	0.8	1.6	0.7	121.3
MRP-10476	C-335072	Atik 3 FU	1.2	1.2	0.8	60.3
MRP-10476	C-335074	Atik 4 FU	0.9	0.4	0.8	101.4
MRP-10476	C-335068	Stillwater FU	1.4	<.08	1.2	6.5
MRP-10476	C-335066	MN BIF 1 FU	0.9	<.08	3.7	3.2
MRP-10476	C-335065	MN BIF 2 FU	1	0.08	1.1	3
MRP-10476	C-335067	MN BIF 3 FU	0.9	0.09	3	6.2
MRP-10476	C-335064	WSP5 102609 RU	0.6	<.08	0.7	2.2
MRP-10476	C-335063	102709 Blk FU	<.08	<.08	<.08	<.08

MRP-10476	C-335069	M-150	16	1.1	5.1	6.2
MRP-10476	C-335075	M-158	88.7	0.5	1.1	107.3

$17.0 \pm 1.5$	$1.00 \pm 0.07$	$5.50 \pm 0.54$
$90.7 \pm 2.74$	$0.350 \pm 0.045$	$105 \pm 3.7$

MRP-11575	C-350196	IL-BG-1 FU	11.4	<0.04	<0.08	1812
MRP-11575	C-350176	IL-BG-2 FU	1.2	0.2	0.2	10.5
MRP-11575	C-350194	IL-BG-3 FU	11.6	<0.04	<0.08	1655
MRP-11575	C-350189	IL-BG-5 FU	3.7	<0.04	<0.08	491
MRP-11575	C-350178	IL-BG-7 FU	1.2	<0.04	0.2	10.3
MRP-11575	C-350195	UTMCB-1 FU	23.4	3.6	2	1462
MRP-11575	C-350167	010611 DI-1 RU	<0.06	<0.04	<0.08	<0.08
MRP-11575	C-350168	010611 DI-1 SFU	<0.06	<0.04	<0.08	<0.08
MRP-11575	C-350166	010611 DI-1GFU	1.1	0.2	<0.08	<0.08
MRP-11575	C-350169	010611 DI-2 GFU	<0.06	<0.04	<0.08	<0.08
MRP-11575	C-350170	010611 DI-2 RU	<0.06	<0.04	<0.08	<0.08
MRP-11575	C-350171	010611 DI-2 SFU	<0.06	<0.04	<0.08	<0.08
MRP-11575	C-350159	010711 DI-A-1 RU	<0.06	<0.04	<0.08	<0.08
MRP-11575	C-350158	010711 DI-A-1GFU	<0.06	<0.04	<0.08	<0.08
MRP-11575	C-350160	010711 DI-A-1SFU	<0.06	<0.04	<0.08	<0.08
MRP-11575	C-350161	010711 DI-A-2GFU	<0.06	<0.04	<0.08	<0.08
MRP-11575	C-350162	010711 DI-A-2RU	<0.06	<0.04	<0.08	<0.08
MRP-11575	C-350163	010711 DI-A-2SFU	1.1	0.2	<0.08	<0.08

MRP-11575	C-350197	01071160/40-1RU	125	<0.04	32.5	4071
MRP-11575	C-350198	01071160/40-2RU	127.3	21.6	32.3	4009
MRP-11575	C-350199	01071160/40-A1RU	127.6	21.2	33	4170
MRP-11575	C-350200	01071160/40-A2RU	170.8	22	32.8	4109
MRP-11575	C-350174	011311 BlkESP3FU	1	<0.04	0.2	4.7
MRP-11575	C-350175	011311 BlkESP3RU	1.1	<0.04	0.2	4.7
MRP-11575	C-350172	ESP3-1 RU	1.1	<0.04	0.2	4.5
MRP-11575	C-350173	ESP3-2 RU	1.1	<0.04	0.2	4.6
MRP-11575	C-350164	WSP6-1 RU	<0.06	<0.04	<0.08	2.5
MRP-11575	C-350165	WSP6-2 RU	<0.06	<0.04	<0.08	1.5
MRP-11575	C-350179	M-150	17.6	1.1	0.3	5.8
MRP-11575	C-350185	M-158	90.2	0.6	0.4	104.3

Lab No.	Hg	CVAF
		ng/L

C-296897 7  
C-296898 <5  
C-296899 <5  
C-296900 <5  
C-296901 <5  
C-296902 <5  
C-296903 6  
C-296904 <5  
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C-296906 33  
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C-305844 <5

C-305831 <5